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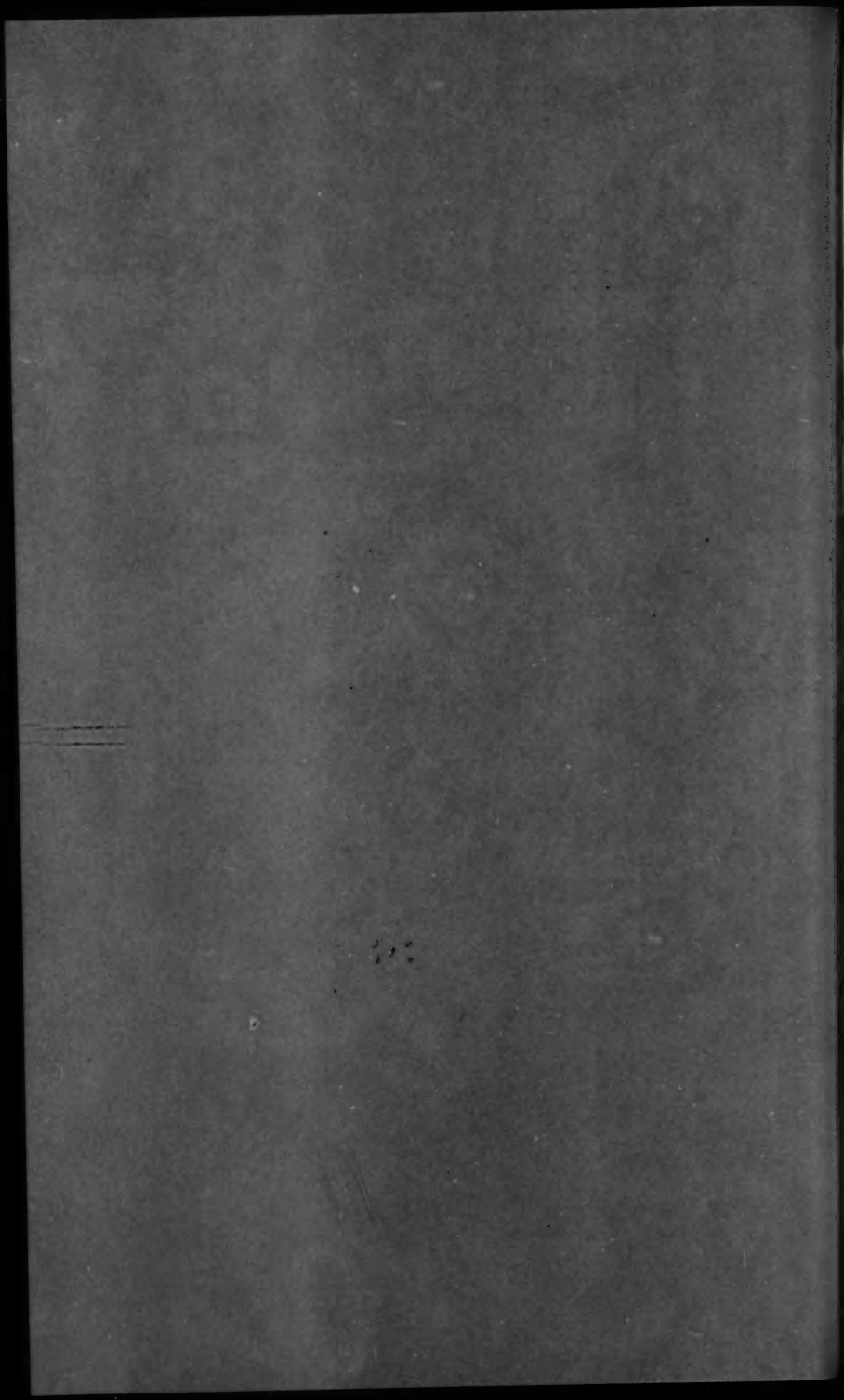

WILDLIFE REVIEW

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CONTENTS

General conservation
Natural resources & climate 2
Soils 2
Conservation education 3
Bibliographies, directories, biography, history 3
Plants
General, ecology, techniques ... 3
Forest surveys 3
Wildlife
Natural areas & refuges 4
Effects of chemicals, weather, cars, etc. 5
Biometrics 5
Techniques 6
Management & research, general . 6
Hunting areas & problems 6
Introductions 7
Food habits & techniques 7
Predation, crop damage, control 7
Reports of organizations & reports of harvests 8
Management & ecology of habitats & animals
Wetlands & wildlife 8
Mammals
General 11
Populations, home ranges, communities 12
Faunas & manuals 12
Parasites & diseases 13
Shrews, moles, bats 13
Rabbits & pikas 15
Rodents
Miscellaneous 17
Rattus and Mus 22
Mammals
Rodents
Sciurids 22
Beaver 24
Muskrat & nutria 25
Carnivores
Bears 25
Raccoon, ringtail, coati 25
Mustelids 26
Dogs, wolves, foxes 26
Cats 27
Big game
General 27
Deer (Odocoileus) 32
Marine 34
Other groups 36
Birds
General 37
Morphology, physiology, behavior, migration 38
Manuals, faunas, communities ... 44
Populations & fluctuations 46
Economics, control, mortality .. 47
Parasites & diseases 48
Game birds--general 48
Quail 49
Pheasants 49
Grouse, partridge, etc. 50
Turkey 52
Doves & pigeons 52
Waterfowl 53
Cranes, rails, shorebirds 57
Hawks & owls 59
Blackbirds, starlings, crows ... 62
Other birds 63
Reptiles & amphibians 66
Author index 69

Except as indicated, abstracts are by Kenneth J. Chiavetta, editor,
and Paul A. Stewart, assistant editor.

NATURAL RESOURCES & CLIMATE

Middleton, A. D., and J. S. Ash. THE CONSERVATION OF GAME AS A NATURAL RESOURCE. The Countryside in 1970 / Proc. Study Conf. held at Fishmongers' Hall, E.C. 4, 4-5 Nov. 1963. p. 241-249. 1964. WR 118: 2
[Game Res. Assoc., 53 Northbrook St., Newbury, Berkshire, England.] The following are considered: past and present use of game birds, present yields of game, methods employed in conservation and management, economic considerations, research, training, integration with other wildlife conservation and land use.

Nature Conservancy. THE COUNTRYSIDE IN 1970 / PROCEEDINGS OF THE STUDY CONFERENCE HELD AT FISHMONGERS' HALL, LONDON, E.C. 4, 4-5 NOVEMBER 1963. Her Majesty's Stationery Office (London). xxii + 286 p. + 29 pls. 1964. $5.00 paper from British Inf. Serv., 845 Third Ave., New York, N. Y. WR 118: 2
Report of a conference aimed at reconciling conflicting interests in the use of natural resources. In Chart of human impacts on the countryside, p. 106-162, by E. M. Nicholson and A. W. Colling, there is a comprehensive view of the problem and some suggestions for its solution.

Reeves, John Henry, Jr. THE HISTORY AND DEVELOPMENT OF WILDLIFE CONSERVATION IN VIRGINIA: A CRITICAL REVIEW. Ph.D. thesis, Va. Polytech. Inst. 345 p. 1960. [From Dissertation Abstr. 25(10), 1965.] WR 118: 2

SOILS

Arneman, H. F., and others. SOIL SURVEY OF CROW WING COUNTY, MINNESOTA. SCS, Ser. 1957, no. 21. i + 40 p., 1 fig. + single-fold maps based on aerial photos and bound in. Apr. 1965. Sold by Supt. Documents. WR 118: 2

Camp, Wallace J., and others. SOIL SURVEY OF YORK COUNTY, SOUTH CAROLINA. SCS, Ser. 1961, no. 17. i + 113 p., 14 figs. + single-fold maps based on aerial photos and bound in. Apr. 1965. Sold by Supt. Documents. WR 118: 2
With a section on wildlife and fish.

Carter, Oliver R., and others. SOIL SURVEY OF THE LAJAS VALLEY AREA, PUERTO RICO. SCS, Ser. 1961, no. 23. ii + 170 p., 9 figs. + single-fold maps based on aerial photos and bound in. Apr. 1965. Bilingual: in English and Spanish. Sold by Supt. Documents. WR 118: 2

Cole, William A., and others. SOIL SURVEY OF WARREN COUNTY, MISSISSIPPI. SCS, Ser. 1961, no. 9. i + 73 p., 6 figs. + single-fold maps based on aerial photos and bound in. Nov. 1964. Sold by Supt. Documents. WR 118: 2
With a section on wildlife.

Cummins, Joseph F. SOIL SURVEY OF WASECA COUNTY, MINNESOTA. SCS, Ser. 1961, no. 24. i + 81 p., 15 figs. + single-fold maps based on aerial photos and bound in. May 1965. Sold by Supt. Documents. WR 118: 2
With a section on the use of soils for wildlife and recreation.

Houston, T. B., and others. SOIL SURVEY OF SUWANNEE COUNTY, FLORIDA. SCS, Ser. 1961, no. 21. i + 101 p., 27 figs. + single-fold maps based on aerial photos and bound in. Mar. 1965. Sold by Supt. Documents. WR 118: 2
With a section on wildlife.

Huckle, H. F., and H. H. Weeks. SOIL SURVEY OF WASHINGTON COUNTY, FLORIDA. SCS, Ser. 1962, no. 2. i + 119 p., 32 figs. + single-fold maps based on aerial photos and bound in. May 1965. Sold by Supt. Documents. WR 118: 2
With a section on the use of soils for wildlife.

McDonald, Herman P., and Robert L. Blevins. RECONNAISSANCE SOIL SURVEY OF FOURTEEN COUNTIES IN EASTERN KENTUCKY. SCS, Ser. 1962, no. 1. i + 72 p., 13 figs. + 15 maps. Feb. [Mar.] 1965. Sold by Supt. Documents. WR 118: 2
With a section on the use of soils for wildlife.

SOILS--Continued

Sautter, Edward H., and others. SOIL SURVEY OF DEUEL COUNTY, NEBRASKA. SCS, Ser. 1960, no. 25. i + 96 p., 36 figs. + single-fold maps based on aerial photos and bound in. June 1965. Sold by Supt. Documents. WR 118: 3

Sherard, Hoyt, and others. SOIL SURVEY OF FRANKLIN COUNTY, ALABAMA. SCS, Ser. 1961, no. 19. i + 80 p., 13 figs. + single-fold maps based on aerial photos and bound in. Mar. 1965. Sold by Supt. Documents. WR 118: 3
With a section on the use of soils for wildlife.

Soil Conservation Service. LIST OF PUBLISHED SOIL SURVEYS. USDA, SCS. 24 unnumbered pages. Jan. 1964. WR 118: 3
A list by counties of all the soil surveys that have been published by the USDA during 1899-1963. These are dated as to the year that the field work was completed--not by date of publication.

CONSERVATION EDUCATION

Marckworth, Gordon D. STATISTICS FROM SCHOOLS OF FORESTRY FOR 1964: DEGREES GRANTED AND ENROLLMENTS. J. Forestry 63(3): 189-195. Mar. 1965. WR 118: 3
[Univ. Washington, Seattle.] In 1964 at 41 forestry schools, degrees were granted in wildlife management as follows: bachelor's, 164; master's, 49; doctoral, 16.

BIBLIOGRAPHIES, DIRECTORIES, BIOGRAPHY, HISTORY

Livingstone, Robert, Jr. A PRELIMINARY BIBLIOGRAPHY WITH KWIC INDEX ON THE ECOLOGY OF ESTUARIES AND COASTAL AREAS OF THE EASTERN UNITED STATES. US F&WS, Spec. Sci. Rept.--Fisheries no. 507. iii + 352 p. May 1965. For sale by Supt. Documents, GPO, at $1.75. WR 118: 3
Abstract: This bibliography, which contains more than 5,470 references, is an initial effort to bring together references on the ecology of estuaries and coastal waters of the eastern United States, and stresses the period 1900-60. It is the starting point for the compilation of a more comprehensive list in the future. The bibliography is in two parts: (1) the complete entries listed alphabetically by authors and (2) a KWIC Index (keyword-in-context) to significant words relevant to title and context.

PLANTS--GENERAL, ECOLOGY, TECHNIQUES

Dansereau, Pierre, and others. CONVERSATIONS ON ECOLOGY. I - XIII. VEGETATION MANAGEMENT 1963-1964. Sarracenia no. 9. 64 p. Apr. 1965. WR 118: 3
[N. Y. Botanical Garden, Bronx, N. Y.] The thirteen letters which are reprinted were published in The New York Botanical Garden's periodical The Garden Journal [Vol. 13-14] in the years 1963 and 1964. The thread that binds these informal expressions of opinion together is the topic of vegetation management. Therefore, the intersecting spheres of technology, science, and industry are made to revolve upon their social, cultural, and political background.

PLANTS--FOREST SURVEYS

O'Regan, W. G., and Marshall N. Palley. A COMPUTER TECHNIQUE FOR THE STUDY OF FOREST SAMPLING METHODS. Forest Sci. 11(1): 99-114, 18 figs. Mar. 1965. WR 118: 3
Abstract: An IBM 704 computer program was used to simulate circular plot sampling. Analytical and simulation results are compared for a simple test

case. Five mapped forests were run through the simulator. Bitterlich point sampling and circular plot sampling were compared. Point sampling was found to be more efficient for total volume and total basal area, but plot sampling was more efficient for total frequency.

WILDLIFE--NATURAL AREAS & REFUGES

Atkinson-Willes, G. L. THE DEVELOPMENT OF A NATIONAL PLAN FOR WILDFOWL REFUGES IN GREAT BRITAIN. IUCN Publ., New Ser. no. 3. p. 180-187, [2 figs.]. Dec. 1964. In English with French summ. WR 118: 4
[Wildfowl Trust, Slimbridge, Gloucestershire, England.]

Bureau of Sport Fisheries & Wildlife. THE CONSERVATION OF MIGRATORY BIRDS AND WETLANDS IN THE UNITED STATES. IUCN Publ., New Ser. no. 3. p. 450-460. Dec. 1964. In English with French summ. WR 118: 4

Goodwin, Richard H. SOME LEGAL ASPECTS OF PRIVATE ACTION IN THE ESTABLISHMENT OF NATURAL AREAS IN THE UNITED STATES. IUCN Publ., New Ser. no. 3. p. 151-162. Dec. 1964. In English with French summ. WR 118: 4
[Conn. Coll., New London.]

Lüdi, W. SOME PRINCIPLES TO CONSIDER IN THE CREATION AND MANAGEMENT OF RESERVES. IUCN Publ., New Ser. no. 3. p. 232-237. Dec. 1964. In English with French summ. WR 118: 4
[Geobotanisches Inst. der Eidg. Technol. Hochschule, Zürich, Switzerland.]

Mörzer Bruijns, M. F., and V. Westhoff. BASIC CRITERIA FOR DEFINING RESERVE AREAS AND SURROUNDING PROTECTIVE BUFFER ZONES IN THE NETHERLANDS. IUCN Publ., New Ser. no. 3. p. 192-197. Dec. 1964. In English with French summ. WR 118: 4
[RIVON, Zeist, Netherlands.]

Munro, David A. ESTABLISHMENT OF WETLAND RESERVES IN CANADA. IUCN Publ., New Ser. no. 3. p. 163-167. Dec. 1964. In English with French summ. WR 118: 4
[Canadian Wildl. Serv., Ottawa, Ontario.]

Nature Conservancy--Great Britain. THE ESTABLISHMENT OF NATURE RESERVES AND SIMILAR AREAS IN GREAT BRITAIN. IUCN Publ., New Ser. no. 3. p. 168-179. Dec. 1964. In English with French summ. WR 118: 4

Okulova, N. M. [SPECIFIC HABITAT FEATURES OF VERTEBRATE FAUNA AT THE NORTHERN BORDER OF THE VOLGA-URAL SANDS.] Zool. Zhur. 42(6): 882-892, map. 1963. [From Biol. Abstr. 45(15), 1964. In Russian with English summ.] WR 118: 4

Requate, H. GERMAN "EUROPE RESERVES". IUCN Publ., New Ser. no. 3. p. 473-474. Dec. 1964. In English with French summ. WR 118: 4

Ruwet, J. C. L'ÉTABLISSEMENT ET LA GESTION DE RÉSERVES ZOOLOGIQUES ET BOTANIQUES DANS LES PISCICULTURES DE LA CAMPINE BELGE. [ESTABLISHMENT AND MANAGEMENT OF ZOOLOGICAL AND BOTANICAL RESERVES IN THE FISH PONDS OF THE CAMPINE BELGE.] IUCN Publ., New Ser. no. 3. p. 441-447. Dec. 1964. In French with English summ. WR 118: 4
[Univ. Liège, Liège, Belgium.]

Tideman, P. LEGAL AND ADMINISTRATIVE WAYS OF CONSTITUTING RESERVES, REFUGES AND NATIONAL PARKS. IUCN Publ., New Ser. no. 3. p. 188-191. Dec. 1964. In English with French summ. WR 118: 4

WILDLIFE--EFFECTS OF CHEMICALS, WEATHER, CARS, ETC.

Davis, Frederic W. IN SPRINGFIELD--ROBINS AND DDT. Mass. Audubon 49(4): 201-205. Summer 1965. WR 118: 5

"In conclusion, the spraying of some eighty elms at the Springfield Armory with about 3.5 pounds of technical DDT per tree on April 16, 1963 appears to have resulted in the deaths of at least 40 robins."

George, John L. PESTICIDE-WILDLIFE STUDIES BY STATES, PROVINCES, AND UNIVERSITIES / AN ANNOTATED LIST OF INVESTIGATIONS THROUGH 1964. US F&WS Circ. 224. 30 p. May 1965. WR 118: 5

[Pa. State Univ., University Park.] Complements F&WS Circulars 84, 143, 167, and 199. Studies are summarized and tabulated by states and provinces, and brief abstracts of findings and progress are reported.

Ratcliffe, D. A. ORGANO-CHLORINE RESIDUES IN SOME RAPTOR AND CORVID EGGS FROM NORTHERN BRITAIN. British Birds 58(3): 65-81. Mar. 1965. WR 118: 5

Analysis of eggs suggests that there is general contamination of the populations of the buzzard Buteo buteo, merlin Falco columbarius, kestrel F. tinnunculus, raven Corvus corax, carrion crow Corvus c. corone, rook C. frugilegus and magpie Pica pica in northern England and southern Scotland by residues of DDT, dieldrin, heptachlor and BHC. A recent local decline in the breeding population and breeding success of buzzards is probably due to these substances as used in sheep dips and obtained from carrion. Merlins have declined in northern England, but, while this trend may have been aggravated by pesticides, its origins seem to pre-date the widespread use of organo-chlorine insecticides. Hill kestrel populations in these regions are unaffected, and their eggs show low residues, for here the species has little contact with these substances. Ravens have shown symptoms, such as deaths of adults and nesting failures, which could justifiably be attributed to organo-chlorine residues, but there has been no general indication of adverse effects on their populations. Carrion crows, rooks and magpies have shown no reduction in numbers or breeding success in this part of Britain, and residues in these species are generally small. Of the corvids studied, only the raven shows levels of contamination approaching those of some raptors.--From summ.

Rogacheva, E. V., and E. E. Syroechkovskii. [THE EFFECT OF HUMAN ACTIVITY ON THE FAUNA OF THE YENISEI (RIVER) TAIGA.] Uch. Zap. Mosk. Obl. Ped. Inst. 109: 197-215. 1962. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 22I236. Transl. of Russian abstr.] WR 118: 5

WILDLIFE--BIOMETRICS

Overton, W. Scott. A MODIFICATION OF THE SCHNABEL ESTIMATOR TO ACCOUNT FOR REMOVAL OF ANIMALS FROM THE POPULATION. J. Wildl. Mgmt. 29(2): 392-395. Apr. 1965. WR 118: 5

[Emory Univ., Atlanta, Ga.] Abstract: A modification of the conventional Schnabel Estimator is developed for the situation in which known removal of animals from the population occurs during the study period, and the population is otherwise assumed closed. This estimator takes the form

$$\hat{N} = \hat{N}^{(0)} + A,$$

where $N^{(0)}$ is the conventional Schnabel Estimator and A is calculated by an iterative scheme. The first approximation to A, $A^{(1)}$, seems to be very close when removal is moderate, where

$$A^{(1)} = \frac{\sum_{i=1}^{k} Z_i n_i M_i}{\sum_{i=1}^{k} n_i M_i}.$$

WILDLIFE--BIOMETRICS--Continued

Seierstad, Ståle, Atle Seierstad, and Ivar Mysterud. STATISTICAL TREATMENT OF THE 'INCONSPICUOUSNESS PROBLEM' IN ANIMAL POPULATION SURVEYS. Nature 206 (4979): 22-23. 3 Apr. 1965. WR 118: 6
[Univ. Oslo, Blindern, Norway.]

Simon, B. G. [ON THE IMPROVEMENT OF STATISTICAL METHODS IN FIELD EXPERIMENTS.] Vest. Sel'skokhoz. Nauk. 8(5): 127-130. 1963. [From Biol. Abstr. 45 (18), 1964. In Russian with English summ.] WR 118: 6
The author proposes replacing 3 formulae of the sums of squares estimation and the table of variance analyses with one formula which provides at once the sought-for residual sum of squares.

WILDLIFE--TECHNIQUES

Slade, Norman A., Jerome J. Cebula, and Robert J. Robel. ACCURACY AND RELIABILITY OF BIOTELEMETRIC INSTRUMENTS USED IN ANIMAL MOVEMENT STUDIES IN PRAIRIE GRASSLANDS OF KANSAS. Trans. Kans. Acad. Sci. 68(1): 173-179. 14 May 1965. WR 118: 6
[Kans. State Univ., Manhattan.] Of 66 azimuth determinations attempted 58 were successful. A comparison of the location accuracy of two azimuth bearings with that from three bearings indicated that they were equally accurate when on-line bearings were not used in the two-bearing calculations. Little detrimental effect of topography on vegetation was found. A power line in the study area caused some static and may have deflected radio beams sent parallel to it.--From summ.

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Brashears, Sidney C. ACP "G" PRACTICES WILL IMPROVE OUR FISH AND WILDLIFE, AND MAYBE OUR SPORTSMEN AS WELL! N. Dak. Outdoors 27(9): 17. Mar. 1965. WR 118: 6
[Wilton, N. Dak.] The Agricultural Conservation Program of the United States Department of Agriculture bears 80% of costs in establishing on private land soil conservation programs which also benefit wildlife. In order to provide landowners with further incentive toward development of wildlife habitat, the Town and Country Club of Bismarck, N. Dak., has initiated a program whereby their organization will bear the additional 20% of wildlife habitat development costs. This organization has advised the local office of the Agricultural Stabilization and Conservation Program of its willingness to share habitat development costs and has sent a letter to each farmer or rancher of the county soliciting participation and pledging financial support.

Myating, L. [HUNTING IN ESTONIA.] Okhota & Okhotnich'e Khoz. 1: 4-5. 1963. [From Biol. Abstr. 45(16), 1964, from Referat. Zhur., Biol., 1963, no. 20I308. Transl. of Russian abstr.] WR 118: 6
A survey of management measures to increase game populations.

WILDLIFE--HUNTING AREAS & PROBLEMS

Kirkpatrick, G. D. THE WILDLIFE UNDERCOVER AGENT. Pa. Game News 36(3): 2-12, illus. Mar. 1965. WR 118: 6
[Pa. Game Comm., Harrisburg.] An account of secret operations tracking down game law violators in Pa.

WILDLIFE--INTRODUCTIONS

Anonymous. [THE ACCLIMATIZATION OF ANIMALS IN THE USSR. DATA FROM THE CONFERENCE ON ANIMAL ACCLIMATIZATION IN THE USSR, FRUNZE, MAY 1963.] Akad. Nauk Kazakhsk. SSR (Alma-Ata). 370 p., illus. 1963. 1 ruble, 30 kopecks. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 11D78K. In Russian.] WR 118: 7

Several of the papers are listed in this issue of WR.

Geptner, V. [WHAT KINDS OF WAYS ARE THERE TO ENRICH THE FAUNA? REMARKS ON THE ACCLIMATIZATION AND "RECONSTRUCTION" OF GAME FAUNA.] Okhota & Okhotnich'e Khoz. 2: 21-26. 1963. [From Biol. Abstr. 45(16), 1964, from Referat. Zhur., Biol., 1963, no. 20I296. Transl. of Russian abstr.] WR 118: 7

Howard, Walter E. CONTROL OF INTRODUCED MAMMALS IN NEW ZEALAND. New Zealand DSIR, Inf. Ser. no. 45. 96 p., 60 figs. 1965. WR 118: 7

[Copies may be available from Animal Ecol. Div., P. O. Box 466, Lower Hutt, New Zealand.] It appears that the problem species of introduced mammals cannot be eradicated from New Zealand. Consequently, it would seem to be more prudent from a long term viewpoint to accept the concomitant vegetational changes, especially where they do not adversely affect watershed conservation. Therefore, a logical long-term objective toward the noxious animal problem is to strive for habitat stability, whether by reseeding, shooting by private hunters, or, wherever the exotic animals have upset seriously the soil-vegetation stability of the original communities, by intensive animal control by government personnel. Better means of either repelling troublesome mammals or of achieving more effective reduction of their numbers with chemicals and other means are urgently required now to protect critical areas and localized sites where the introduced mammals are still depleting the land or are maintaining it in an unstable condition. In the future we must learn to tolerate deer in some areas while at the same time controlling them more effectively in others.--From abstr.

Pavlov, M. P. [RESULTS OF ACCLIMATIZATION OF VALUABLE GAME AND PROSPECTS FOR INCREASED FUR SOURCES.] In: (Acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 133-134. 1963. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 19I200. In Russian.] WR 118: 7

Slulskii, A. A. [THE THEORY AND PRACTICE OF THE ACCLIMATIZATION OF GAME ANIMALS.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 167-172. 1963. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 18I239. In Russian.] WR 118: 7

WILDLIFE--FOOD HABITS & TECHNIQUES

Crutchfield, James. CAN WE PUT AN ECONOMIC VALUE ON FISH AND WILDLIFE? Colo. Outdoors 14(2): 1-5. Mar.-Apr. 1965. WR 118: 7

[Univ. Wash., Seattle.] "In the long run it may very well turn out that a hard-boiled kind of private enterprise look at the value of outdoor recreation may turn out to be the salvation of conservation."

WILDLIFE--PREDATION, CROP DAMAGE, CONTROL

Allen, Durward L. STATES AND BOUNTIES. Mass. Audubon 49(3): 148-152, illus. Spring 1965. WR 118: 7

[Purdue Univ., Lafayette, Ind.] "Since the [U. S. Fish and Wildlife Service's predator and rodent control] program is a creature of Congress, that is the only place where it can be effectively opposed by people who think it has gone too far. I think it has gone too far, with consummate disregard for the rights of the general public and the counsel of biological authorities."

WILDLIFE--REPORTS OF ORGANIZATIONS & REPORTS OF HARVESTS

Colorado. THE 1963 ANNUAL REPORT OF THE COLORADO GAME, FISH AND PARKS DEPARTMENT / A LOOK AHEAD. Colo. Game, Fish & Parks Comm. 49 p., illus. [1965]. WR 118: 8

The section on game management (p. 12-29) contains discussions on species and groups of species covering the present status and future prospects of hunting. Generally, the big game harvest is near its maximum potential, and prospects for taking care of increasing hunter demand lies in fuller utilization and improved management of small game. "Perhaps nowhere in the whole scope of outdoor recreation is the increasing pressure of population, coupled with a gradual disappearance of resources, so severely felt as in the field of game management." In addition to the chief section on game, this publication contains short sections on outdoor recreation, parks, and fish.

Maryland. MARYLAND BOARD OF NATURAL RESOURCES / TWENTIETH ANNUAL REPORT 1963. [Md.] Board Nat. Resources. 190 p. [1964]. WR 118: 8

The short section (p. 61-68) on game management includes brief reports on land acquisition, studies on waterfowl, white-tailed deer, and mourning doves, and on habitat improvement, game bird propagation, removal of nuisance mammals, and emergency winter feeding. Legislation considered in 1963 and relating to wildlife is also listed (p. 178-180).

Natal. 14TH ANNUAL REPORT OF THE NATAL PARKS, GAME AND FISH PRESERVATION BOARD FOR THE PERIOD 1ST APRIL, 1961 TO 31ST MARCH, 1962. 39 p., illus. [1963]. WR 118: 8

With narrative reports from personnel at the various parks and nature reserves.

WETLANDS & WILDLIFE

Blok, E. ARTIFICIAL WATERS IN THE NETHERLANDS. IUCN Publ., New Ser. no. 3. p. 407-409. Dec. 1964. In English with French summ. WR 118: 8 [Fishery Res. Dept., Netherlands.]

Buisman, H. H. THE DUTCH SITUATION. IUCN Publ., New Ser. no. 3. p. 90-91. Dec. 1964. In English with French summ. WR 118: 8

Summary: Because of an agricultural over-production in the Netherlands the Dutch government has decided to stop subsidizing the reclamation of the few remaining inland peatfields and marshes. It is recognised that such areas may be more valuable in their natural state.

Bureau of Sport Fisheries & Wildlife. FISH AND WILDLIFE IN MAN-MADE AND MAN-MODIFIED AQUATIC ENVIRONMENTS. IUCN Publ., New Ser. no. 3. p. 369-383. Dec. 1964. In English with French summ. WR 118: 8

Bureau of Sport Fisheries & Wildlife. MANAGING WETLANDS FOR WILDLIFE. IUCN Publ., New Ser. no. 3. p. 219-231. Dec. 1964. In English with French summ. WR 118: 8

Bureau of Sport Fisheries & Wildlife. RESERVING WETLANDS FOR WILDLIFE. IUCN Publ., New Ser. no. 3. p. 147-150. Dec. 1964. In English with French summ. WR 118: 8

Bureau of Sport Fisheries & Wildlife. RESTORATION OF ALTERED WETLANDS. IUCN Publ., New Ser. no. 3. p. 336-346. Dec. 1964. In English with French summ. WR 118: 8

Bureau of Sport Fisheries & Wildlife. THE VALUE OF WETLANDS TO MODERN SOCIETY. IUCN Publ., New Ser. no. 3. p. 57-63. Dec. 1964. In English with French summ. WR 118: 8

Clement, Roland C. WILDLIFE UTILIZATION OF MAN-MADE AQUATIC HABITATS. IUCN Publ., New Ser. no. 3. p. 392-396. Dec. 1964. In English with French summ. WR 118: 9
[Natl. Audubon Soc., 1130 5th Ave., New York, N. Y.]

Colling, A. W. WETLANDS CONSERVATION PROBLEMS: BRITISH EXPERIENCE. IUCN Publ., New Ser. no. 3. p. 238-247. Dec. 1964. In English with French summ. WR 118: 9

Conder, Peter. NOTES ON THE MANAGEMENT OF THE FRESH WATER REED MARSH OF MINSMERE AND THE SALT WATER LAGOONS OF HAVERGATE ISLAND, SUFFOLK, ENGLAND. IUCN Publ., New Ser. no. 3. p. 302-317. Dec. 1964. In English with French summ. WR 118: 9
[Royal Soc. Protection of Birds, Sandy, Bedfordshire, England.]

Duffey, E. THE NORFOLK BROADS. A REGIONAL STUDY OF WILDLIFE CONSERVATION IN A WETLAND AREA WITH HIGH TOURIST ATTRACTION. IUCN Publ., New Ser. no. 3. p. 290-301. Dec. 1964. In English with French summ. WR 118: 9
[Nature Conservancy, London, England.]

Errington, Paul L. SCANIAN WETLANDS. IUCN Publ., New Ser. no. 3. p. 102-106. Dec. 1964. In English with French summ. WR 118: 9

Bygenraam, J. A. ARTIFICIAL WETLANDS IN THE NETHERLANDS. IUCN Publ., New Ser. no. 3. p. 397-399. Dec. 1964. In English with French summ. WR 118: 9
[ITBON, Arnhem, Netherlands.]

Gabrielson, Ira N. CONSERVATION AND MANAGEMENT OF TEMPERATE WETLANDS. IUCN Publ., New Ser. no. 3. p. 64-69. Dec. 1964. In English with French summ. WR 118: 9
[Wildl. Mgmt. Inst., Washington, D. C.]

Gorter, H. P., J. van Dijk, D. A. Docter, and V. Westhoff. CONSERVATION AND MANAGEMENT OF THE NETHERLANDS LOWLAND MARSHES. IUCN Publ., New Ser. no. 3. p. 248-259. Dec. 1964. In English with French summ. WR 118: 9
[Westhoff: RIVON, Zeist, Netherlands.]

Graham, Edward. WILDLIFE UTILIZATION OF MAN-MADE AQUATIC HABITATS. IUCN Publ., New Ser. no. 3. p. 384-391. Dec. 1964. In English with French summ. WR 118: 9
[SCS, Washington, D. C.]

Hoeve, J. ten. CHANGING THE WATER LEVEL IN DUTCH WETLANDS. IUCN Publ., New Ser. no. 3. p. 271-273. Dec. 1964. In English with French summ. WR 118: 9

Hoffmann, L., compiler. PROJECT MAR. THE CONSERVATION AND MANAGEMENT OF TEMPERATE MARSHES, BOGS AND OTHER WETLANDS. VOL. I. Proceedings of the MAR conference organized by IUCN, ICBP and IWRB at Les Saintes-Maries-de-la-Mer. November 12-16, 1962. IUCN Publ., New Ser. no. 3. 475 p. Dec. 1964. WR 118: 9
Fifty eight papers and associated discussions are included and grouped under major topics such as reasons for conservation, basic criteria for defining reserve areas, management and utilization of wetlands, restoration of modified wetlands, wildlife utilization of man-made aquatic habitats, and international efforts for the conservation of wetlands and wetland fauna. Most of the papers are in English with French summaries--a few are in French with good English summaries. Most of the papers are listed in this issue of WR.

796-787 O - 66 - 2

Hoffmann, Luc. LA VALEUR DES SALINS COMME MILIEUX BIOLOGIQUES. [THE VALUE OF SALT-PANS AS BIOLOGICAL HABITAT.] IUCN Publ., New Ser. no. 3. p. 410-413. Dec. 1964. In French with English summ. WR 118: 10
[Sta. Biol. de la Tour-du-Valat, Le Sambuc, France.]

Kippers, M. UNCERTAINTIES WITH REGARD TO THE DRAINAGE OF WETLANDS. IUCN Publ., New Ser. no. 3. p. 92-95. Dec. 1964. In English with French summ. WR 118: 10
[Govt. Serv. for Land-and Water Use, Netherlands.]

Leentvaar, P. MANAGEMENT AND CHANGING OF WATER QUALITY IN THE NETHERLANDS. IUCN Publ., New Ser. no. 3. p. 267-270. Dec. 1964. In English with French summ. WR 118: 10
[RIVON, Zeist, Netherlands.]

Leeuwen, Chr. G. van. RESTORATION OF MODIFIED WETLANDS IN THE NETHERLANDS. IUCN Publ., New Ser. no. 3. p. 347-349. Dec. 1964. In English with French summ. WR 118: 10
[RIVON, Zeist, Netherlands.]

Mörzer Bruijns, M. F., and V. Westhoff. NOTES ON THE ECONOMIC VALUE OF MARSHES AND WETLANDS IN THE NETHERLANDS. IUCN Publ., New Ser. no. 3. p. 96-101. Dec. 1964. In English with French summ. WR 118: 10
[RIVON, Zeist, Netherlands.]

Odum, Eugene P. THE ROLE OF TIDAL MARSHES IN ESTUARINE PRODUCTION. IUCN Publ., New Ser. no. 3. p. 70-79, 2 figs. Dec. 1964. In English with French summ. WR 118: 10
[Univ. Ga., Athens.]

Rankin, John S., Jr. IMMEDIATE GAIN VS. LONG LOSS THROUGH MARSH DESTRUCTION. IUCN Publ., New Ser. no. 3. p. 80-86. Dec. 1964. In English with French summ. WR 118: 10
[Marine Res. Lab., Univ. Conn., Noank.]

Ranwell, D. S. CONSERVATION AND MANAGEMENT OF ESTUARINE MARSH IN RELATION TO SPARTINA MARSH IN THE BRITISH ISLES. IUCN Publ., New Ser. no. 3. p. 281-287. Dec. 1964. In English with French summ. WR 118: 10
[Nature Conservancy, Wareham, Dorset, England.]

Rooth, J. PLANT AND ANIMAL SPECIES PRODUCING SMALLER OR LARGER AMOUNTS OF FOOD FOR VARIOUS HIGHER VERTEBRATES IN THE "WADDENZEE". IUCN Publ., New Ser. no. 3. p. 318-320. Dec. 1964. In English with French summ. WR 118: 10

Schroevers, P. J., and S. Segal. THE ECONOMIC SIGNIFICANCE OF THE PHYTOCENOLOGICAL RESEARCH IN THE MARSH-REGIONS OF THE NETHERLANDS. IUCN Publ., New Ser. no. 3. p. 260-266. Dec. 1964. In English with French summ. WR 118: 10
[RIVON, Zeist, Netherlands.]

Swanberg, P. O. THE DRAINING OF LAKE HORNBORGASJÖN IN SWEDEN: A FINANCIAL FAILURE AND THE REASONS FOR IT. IUCN Publ., New Ser. no. 3. p. 109-115. Dec. 1964. In English with French summ. WR 118: 10
[Skara, Sweden.]

Taro, Reijo. VEDEN NOPEAN MADALTUMISEN VAIKUTUKSESTA ERÄÄN LAMMEN LINNUSTOON. [INFLUENCE OF PARTIAL RECLAMATION UPON THE BIRD FAUNA OF A SMALL LAKE.] Suomen Riista 17: 106-111, 3 figs. 1964. In Finnish with English summ. WR 118: 10

Voo, E. E. van der. DANGER TO SCIENTIFICALLY IMPORTANT WETLANDS IN THE NETHERLANDS BY MODIFICATION OF THE SURROUNDING ENVIRONMENT. IUCN Publ., New Ser. no. 3. p. 274-278. Dec. 1964. In English with French summ. WR 118: 11
[RIVON, Zeist, Netherlands.]

Westhoff, V. PLANT SPECIES CHARACTERISTIC OF WETLAND HABITATS IN THE NETHERLANDS. IUCN Publ., New Ser. no. 3. p. 122-129. Dec. 1964. In English with French summ. WR 118: 11
[RIVON, Zeist, Netherlands.]

Wijngaarden, A. van, J. Rooth, and W. J. Boer Leffef. ANIMAL SPECIES IN THE NETHERLANDS PECULIAR TO WETLAND HABITATS. IUCN Publ., New Ser. no. 3. p. 116-121. Dec. 1964. In English with French summ. WR 118: 11
[RIVON, Zeist, Netherlands.]

Zaaijer, J. W. THE ECONOMIC AND RECREATIONAL VALUES OF SWAMPLAND. IUCN Publ., New Ser. no. 3. p. 87-89. Dec. 1964. In English with French summ. WR 118: 11

Zonderwijk, P. MANAGEMENT OF REED-LANDS IN THE NETHERLANDS. IUCN Publ., New Ser. no. 3. p. 279-280. Dec. 1964. In English with French summ. WR 118: 11
[Wageningen, Netherlands.] Summary: In many reedlands in the Netherlands with a total acreage of 8000 ha (2000 tidal) spraying with hormonal weedkillers is carried out. This is practised mainly to control the growth of Convolvulus sepium and Rubus species. The side effects of herbicides on other elements of the vegetation are under investigation.

MAMMALS--GENERAL

Chilingaryan, A. A., and B. O. Geilikman. [EXPERIENCE IN THE ACCLIMATIZATION OF NUTRIA (MYOCASTOR COYPUS) AND AXIS DEER (CERVUS NIPPON HORTULORUM) IN ARMENIA.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 200-202. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I253. In Russian.] WR 118: 11

Denman, Norris S. COLONIZATION OF THE ISLANDS OF THE GULF OF ST. LAWRENCE BY MAMMALS. Ecology 46(3): 340-341. Spring 1965. WR 118: 11
[350 William Birks St., St. Bruno de Montarville, Quebec, Canada.] Colonization of islands in the Gulf of St. Lawrence by mammals was most likely accomplished by mammals being rafted from the mainland.

Harthoorn, A. M. APPLICATION OF PHARMACOLOGICAL AND PHYSIOLOGICAL PRINCIPLES IN RESTRAINT OF WILD ANIMALS. Wildl. Monographs no. 14. 78 p., 7 figs. Mar. 1965. WR 118: 11
[Univ. East Africa, Nairobi, Kenya.]

Kuznetsov, B. A. [FAT DEPOSITION IN MAMMALS AND THE EFFECT ON IT OF THE ANIMALS' ECOLOGY.] Izvest. Timiryazevsk. Sel'skokhoz. Akad. 6: 120-125. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 21I238. Transl. of Russian abstr. Original with English summ.] WR 118: 11
The number of fat deposits and their properties change abruptly in the different seasons, especially in hibernating animals. The fall fat of bears, marmots and badgers contains a large amount of vitamins (especially A and D), but in spring there is little remaining. The fat of marmots and ground squirrels, which are hibernating animals, is quite different from that of winter-active animals in its very low melting and freezing points and its high iodine number. In the brown bear and the badger, which hibernate, the fat constants are like those of winter-active species. The fat of pinnipeds and cetaceans has a freezing point near 0°C and a high iodine number.

MAMMALS--GENERAL--Continued

Montagu, Ivor. COMMUNICATION ON THE CURRENT SURVIVAL IN MONGOLIA OF THE WILD HORSE (EQUUS PRZEWALSKII), WILD CAMEL (CAMELUS BACTRIANUS FERUS) AND WILD ASS (EQUUS HEMIONUS). Proc. Zool. Soc. London 144(3): 425-428, 2 figs. + 1 pl. Mar. 1965. WR 118: 12

Pruitt, William O. A FLIGHT RELEASER IN WOLF-CARIBOU RELATIONS. J. Mammal. 46(2): 350-351, 1 fig. May 1965. WR 118: 12
[Memorial Univ. Newfoundland, St. John's.]

Samusenko, E. G. [NOTES ON THE DIET OF THE BADGER AND THE JACKAL IN THE AMU-DAR'YA DELTA.] Sb. Nauchn.-Tekh. Inform. Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya i Pushniny 58: 9-14. 1963. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 22I213. Transl. of Russian abstr.] WR 118: 12

MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

Bothschafter, Elmar. ÜBER ZAHLENVERHÄLTNISSE EINIGER KLEINSÄUGER IM BAYERISCHEN WALD. [ON THE NUMERICAL PROPORTION OF SOME SMALL MAMMALS IN THE BAVARIAN FOREST.] Säugetierk. Mitteil. 12(2-3): 56-64. 1 May 1964. [From J. Mammal. 46(1), 1965. In German.] WR 118: 12

Helminen, Matti. RIISTATILANNE METSÄSTYSKAUDEN 1963/64 PÄÄTTYESSÄ. [RELATIVE ABUNDANCE OF SOME GAME AND FUR SPECIES IN FINLAND AT THE END OF THE 1963/64 HUNTING SEASON.] Suomen Riista 17: 180-186, 12 maps. 1964. In Finnish with English summ. WR 118: 12

Klein, David R. POSTGLACIAL DISTRIBUTION PATTERNS OF MAMMALS IN THE SOUTHERN COASTAL REGIONS OF ALASKA. Arctic 18(1): 7-20, 2 figs. Mar. 1965. WR 118: 12
[Alaska Coop. Wildl. Res. Unit, College.] Small mammals, brown bear, black bear, wolf, black-tailed deer, moose, caribou, elk, mountain goat, and mountain sheep are considered.

Simpson, George Gaylord. SPECIES DENSITY OF NORTH AMERICAN RECENT MAMMALS. Systematic Zool. 13(2): 57-73. 5 June 1964. [From J. Mammal. 46(1), 1965.] WR 118: 12

Vershinin, A. A., E. M. Dolgorukov, L. K. Raus, and Belov. [CHANGES IN THE MAMMALIAN COMMERCIAL-GAME FAUNA OF THE KAMCHATKA PENINSULA UNDER THE INFLUENCE OF NATURAL CAUSES AND OF HUMAN ACTION.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 67-70. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 21I206. In Russian.] WR 118: 12

MAMMALS--FAUNAS AND MANUALS

Dalquest, Walter W. MAMMALS FROM THE SAVE RIVER, MOZAMBIQUE, WITH DESCRIPTIONS OF TWO NEW BATS. J. Mammal. 46(2): 254-264, 1 fig. May 1965. WR 118: 12
[Midwestern Univ., Wichita Falls, Texas.]

Hoslett, Sherman A. THE MAMMALS OF WINNESHIEK AND ALLAMAKEE COUNTIES, IOWA. Iowa State J. Sci. 39(4): 359-386, 1 fig. 15 May 1965. WR 118: 12
[Intern. Christian Univ., Mitaka, Tokyo, Japan.] Thirty-six species of mammals which were collected or reliably reported to be in Winneshiek and Allamakee Counties, Iowa, are included in an annotated list. Additional species are included in a hypothetical list.--From abstr.

Manville, Richard H., and Stanley P. Young. DISTRIBUTION OF ALASKAN MAMMALS. US F&WS Circ. 211. iv + 74 p., illus. 1965. Available from Supt. Documents, GPO, Washington, D. C., at 50¢. WR 118: 13

Abstract: This report describes the factors in Alaska's environment that affect the distribution of mammals in that State; it considers 103 species of mammals (including 20 cetaceans) and 116 additional subspecies. Ranges and habitat requirements are mentioned briefly. For most species, maps show record stations and general range in the State and adjacent waters; ranges of subspecies are not mapped separately. The grizzly and brown bears are lumped, pending further taxonomic studies. Listed are 128 type localities of mammals within the State of Alaska. This circular makes available current data on mammal distribution, preliminary to further systematic work.

MAMMALS--PARASITES AND DISEASES

Esslinger, J. H. ZOONOTIC FILARIASIS IN COLOMBIA: SMALL MAMMALS. Bull. Tulane Univ. Med. Fac. 23(1): 3-7. 1963. [From Biol. Abstr. 45(15), 1964.] WR 118: 13

[Tulane Univ., New Orleans, La.]

SHREWS, MOLES, BATS

Beaucournu, J.-C. OBSERVATIONS SUR LE BAGUAGE DES CHIROPTÈRES. RÉSULTATS ET DANGERS. [OBSERVATIONS ON THE BANDING OF BATS. RESULTS AND DANGERS.] Mammalia (Paris) 26(4): 539-565. Dec. 1962. [From J. Mammal. 46(1), 1965. In French.] WR 118: 13

Booth, Ernest S. A BAT DIE OFF IN MEXICO. J. Mammal. 46(2): 333-334. May 1965. WR 118: 13

[Loma Linda Univ., Loma Linda, Calif.] A report of "hundreds of thousands of dead bats on the floor" of a cave.

Borodin, L. P. [THE RUSSIAN DESMAN.] Mordovsk. Knizhoe Izd. (Saransk). 303 p., illus. 1963. 1 ruble, 43 kopecks. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1964, no. 51225K. Transl. of Russian abstr.] WR 118: 13

Buckner, C. H., and D. G. H. Ray. STUDIES ON THE INTRODUCED SHREW, SOREX CINEREUS CINEREUS KERR, IN NEWFOUNDLAND. Interim Res. Rept., Forest Entomol. Lab., Canada Dept. Forestry (Winnipeg). 24 p., mimeo. May 1964. [From J. Mammal. 46(1), 1965.] WR 118: 13

Cross, Stephen P. ROOSTING HABITS OF PIPISTRELLUS HESPERUS. J. Mammal. 46(2): 270-279, 3 figs. May 1965. WR 118: 13

[Southern Oregon Coll., Ashland.] Abstract: This study strongly supports the widely held view that Pipistrellus hesperus roosts primarily in cracks and crevices of rocks. More than 70 individual roosts were found by watching bats as they returned to large cliffs at daybreak. Some individuals approach and enter without hesitation; others exhibit a searching behavior before entering. Banding studies revealed little loyalty of a bat to a particular crevice, but many of the bats remain in a general roost area. One maternity colony was found. Available evidence suggests that this species often roosts at night on rocky cliff faces.

Davis, Wayne H., and Harold B. Hitchcock. BIOLOGY AND MIGRATION OF THE BAT, MYOTIS LUCIFUGUS, IN NEW ENGLAND. J. Mammal. 46(2): 296-313, 3 figs., 1 pl. May 1965. WR 118: 13

[Univ. Ky., Lexington.]

Davis, William B. REVIEW OF THE EPTESICUS BRASILIENSIS COMPLEX IN MIDDLE AMERICA WITH THE DESCRIPTION OF A NEW SUBSPECIES FROM COSTA RICA. J. Mammal. 46(2): 229-240, 5 figs. May 1965. WR 118: 14
[Texas A & M Univ., College Station.]

De Byle, Norbert V. SHORT-TAILED SHREW ATTACKS GARTER SNAKE. J. Mammal. 46(2): 329. May 1965. WR 118: 14

De Coursey, G., and Patricia De Coursey. ADAPTIVE ASPECTS OF ACTIVITY RHYTHM IN BATS. Biol. Bull. 126(1): 14-27. Feb. 1964. [From J. Mammal. 46 (1), 1965.] WR 118: 14

Dumitresco, Margareta, and Traian Orghidan. CONTRIBUTION A LA CONNAISSANCE DE LA BIOLOGIE DE PIPISTRELLUS PIPISTRELLUS SCHREBER. [A CONTRIBUTION TO THE STUDY OF THE BIOLOGY OF PIPISTRELLUS PIPISTRELLUS SCHREBER.] Ann. Speleol. 18(4): 511-517, illus. 1963. [From Biol. Abstr. 45(13), 1964. In French.] WR 118: 14
[Inst. Spéol., Bucharest, Romania.] A comparative study was made of the morphology and biometry of 120 individuals. Ectoparasites were noted on all captured individuals.

Dwyer, P. D. SEASONAL CHANGES IN ACTIVITY AND WEIGHT OF MINIOPTERUS SCHREIBERSI BLEPOTIS (CHIROPTERA) IN NORTH-EASTERN NEW SOUTH WALES. Australian J. Zool. 12(1): 52-69. Apr. 1964. [From J. Mammal. 46(1), 1965.] WR 118: 14

Emel'yanova, N. D., and N. N. Vysokovskii. [THE PROBLEM OF THE WINTERING OF BATS AND THEIR ECTOPARASITES IN THE ENVIRONS OF KRASNOYARSK.] Doklady Irkutsk Protivochmnogo Inst. 3: 146-148. 1962. [From Biol. Abstr. 45(15), 1964, from Referat. Zhur., 1963, no. 16I268. Transl. of Russian abstr.] WR 118: 14

Findley, James S. SHREWS FROM HERMIT CAVE, GUADALUPE MOUNTAINS, NEW MEXICO. J. Mammal. 46(2): 206-210, 9 figs. May 1965. WR 118: 14
[Univ. N. Mex., Albuquerque.] Abstract: Study of remains of Sorex vagrans, S. nanus and Notiosorex crawfordi from pre-Basketmaker deposits in Hermit Cave, New Mexico, revealed that S. vagrans was smaller than animals of this species currently living in nearby mountains. However, the other two species were essentially like their extant relatives.

Griffin, D. R., J. H. Friend, and F. A. Webster. TARGET DISCRIMINATION BY THE ECHOLOCATION OF BATS. J. Expt1. Zool. 158(2): 155-168, 3 figs. Mar. 1965. WR 118: 14
[Biol. Labs., Harvard Univ., Cambridge, Mass.] Abstract: Myotis lucifugus first learned to catch mealworms mechanically projected into the air in a laboratory flight room, and were then trained to distinguish mealworms from small metal or plastic disks (3.0 x 12.5 mm and 0.5 x 6.3 mm). These three targets were presented singly in a semi-random sequence, traveling along very similar trajectories. The most skillful bats caught 98% of the mealworms while avoiding any contact with 85 to 90% of the two types of disks. Echoes of 100-20 kc pulses (similar to the bats' orientation sounds) were measured from all three targets in almost all possible angular orientations. There was great overlap in intensity both in the peak amplitudes and in each of the ten 8 kc bands from 100-20 kc. These bats thus seem capable of some qualitative discrimination based on the "fine structure" of echoes from small moving targets.

Griffin, Donald R., and Harold B. Hitchcock. PROBABLE 24-YEAR LONGEVITY RECORDS FOR MYOTIS LUCIFUGUS. J. Mammal. 46(2): 332. May 1965. WR 118: 14
[Harvard Univ., Cambridge, Mass.]

Rongstad, Orrin J. SHORT-TAILED SHREW ATTACKS YOUNG SNOWSHOE HARE. J. Mammal. 46(2): 328-329. May 1965. WR 118: 14

Stains, Howard J. FEMALE RED BAT CARRYING FOUR YOUNG. J. Mammal. 46(2): 333. May 1965. WR 118: 15
[Southern Ill. Univ., Carbondale.] The combined weight of the four young bats was almost twice her weight.

Suga, Nobuo. RESPONSES OF CORTICAL AUDITORY NEURONES TO FREQUENCY MODULATED SOUNDS IN ECHO-LOCATING BATS. Nature 206(4987): 890-891, 1 fig. 29 May 1965. WR 118: 15
[Univ. Calif., Los Angeles.]

Suthers, Roderick A. ACOUSTIC ORIENTATION BY FISH-CATCHING BATS. J. Exptl. Zool. 158(3): 319-347, 7 figs., 2 pls. Apr. 1965. WR 118: 15
[Harvard Univ., Cambridge, Mass.]

Van Heerdt, P. F., and J. W. Sluiter. RESULTATEN VAN HET VLEERMUISONDERZOEK IN NEDERLAND IN 1961. [RESULTS OF THE 1961 BAT INVESTIGATIONS IN THE NETHERLANDS.] Levende Nat. 65(4): 87-92. 1962. [From Biol. Abstr. 45(13), 1964. In Dutch.] WR 118: 15
[Univ. Utrecht, Utrecht, Netherlands.] The 1961 observations of bats hibernating in man-made caverns in South-Limburg (Netherlands) are tabulated. The figures of the census do not deviate very much from those for the preceding years. New data on distribution and fluctuations in the population of Myotis mystacinus in the central part of the Netherlands were obtained by continuing the banding scheme. Some information is presented on nurseries of Nyctalus noctula, Rhinolophus hipposiderus, M. mystacinus, M. dasycneme, and Pipistrella pipistrella in various parts of the Netherlands. Three out of 32 bat nursery boxes appeared to be inhabited. New data on maximum age in some species of bats are tabulated.

RABBITS AND PIKAS

Andersson, Per, and Matti Helminen. JÄNISTEN RUNSAUS JA SAIRAUDET. [RELATIVE ABUNDANCE OF LEPUS TIMIDUS AND L. EUROPAEUS IN FINLAND IN 1948-63 (64) AND THEIR DISEASES IN 1955-63.] Suomen Riista 17: 53-64, 5 figs. 1964. In Finnish with English summ. WR 118: 15
It is pointed out that, despite ecological differences, both species have shown essentially similar population trends. The fluctuations of tetraonid populations during the years in question also fit into the same scheme. In 1962 there were 11 cases of toxoplasmosis at a time when both species were considered "most abundant." Protostrongylus seems to have been very common in L. timidus even when the hare population was increasing.

Billard, Ruth S. A PARTIAL BIBLIOGRAPHY OF SNOWSHOE HARE. NE Forest Wildl. Res. Com., Hare Subcom. Variously paged totalling 42 pages. [1965.] WR 118: 15

Bookhout, Theodore A. BREEDING BIOLOGY OF SNOWSHOE HARES IN MICHIGAN'S UPPER PENINSULA. J. Wildl. Mgmt. 29(2): 296-303, 5 figs. Apr. 1965. WR 118: 15
[Ohio Coop. Wildl. Res. Unit, Columbus.] Abstract: This paper presents results of a study of reproduction in snowshoe hares (Lepus americanus) from June, 1957, through April, 1962. Data were based on weights of testes, occurrence of spermatogenesis, and embryo counts. The male breeding season began in late January and terminated in August. From September to late January there was no testicular activity. Females came into breeding condition at least 6 weeks later than did males. No signs of mating activity were observed before March 17, and breeding was not common before early April. The prevalence of visible pregnancy did not become substantial until the last half of April, and the first known litters appeared in the period May 10-17. No known breeding occurred in August, and no litters were recovered in September. The average number of embryos per pregnancy was 2.68 for all years and did not exceed 3.0 in any one year. Average litter size tended to increase as the breeding season progressed. The modal frequency was 2, with a range of 1-5. Calculated average

annual productivity was 6.54 young per female. Definite peaks in conception and parturition occurred the first half of April and the last half of May, respectively. Second conception and parturition periods, of less magnitude and distributed over an extended period, occurred from mid-May to mid-July and from mid-June to mid-August, respectively. The production of third litters by some females was indicated.

Bull, P. C. ECOLOGY OF HELMINTH PARASITES OF THE WILD RABBIT ORYCTOLAGUS CUNICULUS (L.) IN NEW ZEALAND. New Zealand DSIR Bull. 158. 147 p. 1964. Price 20 shillings. WR 118: 16

Parasites were more numerous in rabbits from dense than from sparse rabbit populations and from damp than from dry habitats. All worm-infested rabbits appeared healthy, but heavy infestations were sometimes associated with lighter body weights and reduced female fertility. It was concluded that helminths are not a primary cause of significant mortality among wild rabbits in New Zealand.

Dodds, Donald G. REPRODUCTION AND PRODUCTIVITY OF SNOWSHOE HARES IN NEWFOUNDLAND. J. Wildl. Mgmt. 29(2): 303-315, 4 figs. Apr. 1965. WR 118: 16

[Acadia Univ., Wolfville, Nova Scotia.] Abstract: Snowshoe hare (Lepus americanus) populations were studied in Newfoundland from 1954 to 1962. The normal breeding season extended from late March to early August. Sixteen captive litters averaged 3.1 embryos, and 137 wild gravid females averaged 3.9 embryos. Embryo resorption appeared highest just before and during the peak population. Examination of 190 adult females provided an estimate of the mean number of between 2.9 and 3.5 litters per year. Differences in litter size were indicated between areas and between years. The sex ratio for 854 hares did not vary significantly from 1:1. Neither monthly sex ratios nor fetal sex ratios indicated significant differences from 1:1. Juveniles appeared as adults, according to epiphyseal closure, at about 7.5 months. Juveniles died at a greater rate than adults from parturition until about December 15. The proportion of juveniles in the fall population increased generally until 1958-59 and decreased sharply in 1960 and 1961. The entire population increased generally until 1960 and decreased through 1961 and 1962. Data indicated a positive correlation between reproductive rate and productivity during the years of population increase, as measured by the proportion of juveniles in the fall population. Productivity decreased sharply 1 year prior to the declines in reproductive rate and population density; this decline in productivity could not be fully accounted for by an indicated drop in reproductive rate. It is suggested that major population declines or crashes may be predicted a year in advance by a productivity decline. A span of 8-9 years occurred between lows in the population. Earlier annual open seasons could result in a more efficient harvest.

Mead-Briggs, A. R. SOME EXPERIMENTS CONCERNING THE INTERCHANGE OF RABBIT FLEAS, SPILOPSYLLUS CUNICULI (DALE), BETWEEN LIVING RABBIT HOSTS. J. Anim. Ecol. 33(1): 13-26, illus. 1964. [From Biol. Abstr. 45(16), 1964.] WR 118: 16

[Min. Agr., Guildford, Surrey, England.]

Radchuk, V. [HARE TRAPPING IN THE UKRAINE.] Okhota & Okhotnich'e Khoz. 1: 11-13. 1963. [From Biol. Abstr. 45(16), 1964, from Referat. Zhur., Biol., 1963, no. 19I155. Transl. of Russian abstr.] WR 118: 16

Tiemeier, Otto W., M. F. Hansen, Monroe H. Bartel, E. T. Lyon, B. M. El-Rawi, K. J. McMahon, and E. H. Herrick. THE BLACK-TAILED JACK RABBIT IN KANSAS. Kans. Agr. Expt. Sta., Tech. Bull. 140. 75 p., 68 figs., 1 pl. Feb. 1965. WR 118: 16

A 4-part study of Lepus californicus melanotis: Part I. Bionomics: study area, reproduction, growth and development, age distribution, life span, censusing, live trapping and tagging, crop damage, predation, and habits; Part II. Helminth and arthropod parasites; Part III. Bacterial and rickettsial diseases; Part IV. Endocrine studies.

Youill, Thomas MacKay. VIRAL AND PARASITIC INFECTIONS OF SNOWSHOE HARES IN ALBERTA. Ph.D. thesis, Univ. Wis. 127 p. 1964. [Long abstr. in Dissertation Abstr. 25(9), 1965.] WR 118: 17

RODENTS--MISCELLANEOUS

Artimo, Atso. THE BACULUM AS A CRITERION FOR DISTINGUISHING SEXUALLY MATURE AND IMMATURE BANK VOLES, CLETHRIONOMYS GLAREOLUS SCHR. Ann. Zool. Pennici 1: 1-6. 1964. [From J. Mammal. 46(1), 1965.] WR 118: 17

Bachurikhina, L. S. [CONDITIONED DEFENSE REFLEXES TO POISONED BAIT, AND HOW SUSLIKS (CITELLUS PYGMAEUS PALL.) AND RATS (RATTUS NORVEGICUS BERK.) BECOME ACCUSTOMED TO ZOOICIDES.] Vses. Nauchn.-Issled. Inst. Zashchity Rast. (Leningrad). 1959. [From Biol. Abstr. 45(14), 1964, from Referat. Zhur., Biol., 1960, no. 30618D. Transl. of Russian abstr.] WR 118: 17

Birkenholz, Dale E., and William O. Wirtz II. LABORATORY OBSERVATIONS ON THE VESPER RAT. J. Mammal. 46(2): 181-189, 2 figs., 1 pl. May 1965. WR 118: 17

[Ill. State Univ., Normal.] Abstract: The growth, development and general behavior of Nyctomys sumichrasti were observed during a 13-month period. Adults are primarily nocturnal. In the laboratory, family units or individuals raised together reside with each other; strangers to the group are not tolerated. Mating behavior, copulation and care of the young are described. The gestation period is approximately 30 days. Litter size averages two. The young reach adult size in approximately 6 weeks. Rate of development is rapid. The young crawl slowly at 2 days of age, and well at 5 days. When the eyes open at 15 to 18 days, coordination approximates that of the adults.

Carmon, J. L., F. B. Golley, and R. G. Williams. AN ANALYSIS OF THE GROWTH AND VARIABILITY IN PEROMYSCUS POLIONOTUS. Growth 27(4): 247-254. 1963. [From Biol. Abstr. 45(17), 1964.] WR 118: 17

Clough, Garrett C. LEMMINGS. A STUDY IN ECOLOGY. Union Coll. Symposium (Schenectady) 3(2): 17-21, illus. 1964. [From J. Mammal. 46(2), 1965.] WR 118: 17

Clough, Garrett C. PHYSIOLOGICAL EFFECT OF BOTFLY PARASITISM ON MEADOW VOLES. Ecology 46(3): 344-346. Spring 1965. WR 118: 17

[Univ. R. I., Kingston.] Abstract: Botflies of the genus Cuterebra were found infesting a population of meadow voles, Microtus pennsylvanicus, in three out of five years during the months of July, August or September. Maximum incidence was 45% in August. The number and position of larvae on the hosts is described. Infested voles had lighter thymus glands and heavier spleens than noninfested voles but survival time in cold water was only slightly lower and adrenal weights were similar.

Eads, R. B., H. A. Treviño, and E. G. Campos. ECTOPARASITES OF THE SPINY POCKET MOUSE, LIOMYS IRRORATUS TEXENSIS MERRIAM. Southwestern Nat. 10(1): 17-21. 15 Mar. 1965. WR 118: 17

[Public Health Serv., Brownsville, Texas.] A list is given of 18 spp. of mites, 2 of ticks, and 2 of sucking lice found on 77 pocket mice trapped in Cameron County, Texas.

Emlesa, S. T., and W. Kem. ACTIVITY RHYTHM IN PEROMYSCUS: ITS INFLUENCE ON RATES OF RECOVERY FROM NEMBUTAL. Science 142(3599): 1682-1683. 27 Dec. 1963. [From J. Mammal. 46(1), 1965.] WR 118: 17

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Erbaiva, M. A. [SOME PROBLEMS OF ECOLOGY OF CLETHRIONOMYS RUTILUS IN THE SELENGI RIVER DELTA.] Uch. Zap. Buryatsk Gos. Pedagog. Inst. 24. p. 83-89. 1961. [From Biol. Abstr. 45(15), 1964, from Referat. Zhur., Biol., 1963, no. 15I305. Transl. of Russian abstr.] WR 118: 18

Frank, Fritz. DIE FELDMAUS, MICROTUS ARVALIS (PALLAS), IM NORDWESTDEUTSCHEN REKORDWINTER 1962/63. [THE FIELDMOUSE, MICROTUS ARVALIS (PALLAS) IN NORTHWESTERN GERMANY IN THE WINTER OF 1962/63. Z. Säugetierk. 29(3): 146-152. May 1964. [From J. Mammal. 46(1), 1965. In German.] WR 118: 18

Hayward, J. S. THE GROSS BODY COMPOSITION OF SIX GEOGRAPHIC RACES OF PEROMYSCUS. Canadian J. Zool. 43(2): 297-308, 4 figs. Mar. 1965. WR 118: 18
[Harvard Med. School, Boston, Mass.]

Hayward, J. S. METABOLIC RATE AND ITS TEMPERATURE-ADAPTIVE SIGNIFICANCE IN SIX GEOGRAPHIC RACES OF PEROMYSCUS. Canadian J. Zool. 43(2): 309-323, 5 figs. Mar. 1965. WR 118: 18
[Harvard Med. School, Boston, Mass.]

Hayward, J. S. MICROCLIMATE TEMPERATURE AND ITS ADAPTIVE SIGNIFICANCE IN SIX GEOGRAPHIC RACES OF PEROMYSCUS. Canadian J. Zool. 43(2): 341-350, 5 figs. Mar. 1965. WR 118: 18
[Harvard Med. School, Boston, Mass.]

Hegdal, Paul L., A. Lorin Ward, Ancel M. Johnson, and Howard P. Tietjen. NOTES ON THE LIFE HISTORY OF THE MEXICAN POCKET GOPHER (CRATOGEOMYS CASTANOPS). J. Mammal. 46(2): 334-335. May 1965. WR 118: 18
[Denver Wildl. Res. Center, Denver, Colo.]

Horsfall, Frank, Jr. OBSERVATIONS ON FLUCTUATING PREGNANCY RATE OF PINE MICE AND MOUSE FEED POTENTIAL IN VIRGINIA ORCHARDS. Proc. Am. Soc. Hort. Sci. 83: 276-279, illus. 1963. [From Biol. Abstr. 45(16), 1964.] WR 118: 18
[VPI, Blacksburg, Va.] In southern Va., 26 to 41 adult female pine mice (Pitmys pinetorum) were snap trapped in each of 13 successive months. The pregnancy rate varied from 13% for Apr. to 73% for Aug. Fetal numbers ranged from 1 to 4 with a year-long mean of 2.0. With minor variations, a uniform gradient was found for the rise and subsequent decline between extremes.--From auth. abstr.

Ismagilov, M. I. [NOTES ON THE RODENTS AND THEIR ECOLOGY IN THE SOUTHERN KYZYL KUM DESERT.] Trudy Inst. Zool. Akad. Nauk Kazakhsk. SSR 17: 192-200. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I187. Transl. of Russian abstr.] WR 118: 18

Kostin, V. P. [RODENTS OF THE LOWER REACHES OF THE AMU-DAR'YA RIVER, THE USTYURT PLATEAU, AND ADJACENT TERRITORY. DATA ON THEIR DISTRIBUTION, ECOLOGY, AND ECONOMIC IMPORTANCE.] Trudy Tashkentsk. Univ. 198: 1-89, illus. 1962. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 22I192. Transl. of Russian abstr.] WR 118: 18
The distribution and ecology of 30 species of rodents, with details for Rhombomys opimus and the muskrat are given.

Kratochvíl, Josef. PŘÍSPĚVEK K ROZŠÍŘENI MYŠICE TEMNOPÁSÉ A MYŠICE MALOOKÉ V ČESKOSLOVENSKU. [SUPPLEMENTARY NOTE ON THE SPREAD OF APODEMUS AGRARIUS AND A. MICROPS IN CZECHOSLOVAKIA.] Zool. Listy 11(1): 15-26, illus., maps. 1962. [From Biol. Abstr. 45(18), 1964. In Czech with German summ.] WR 118: 18
[Czechoslovak Acad. Sci., Lidicka, Brne, Czechoslovakia.]

Larina, N. I., and V. L. Golikova. [GEOGRAPHIC CHANGES IN BIOTOPICAL ADAPTATION OF SYLVAN MOUSE-LIKE RODENTS IN THE EUROPEAN PART OF THE USSR.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68(3): 21-33. 1963. [From Biol. Abstr. 45(13), 1964. In Russian.] WR 118: 18

Lavrov, K. L. [NOTES ON THE RODENTS OF THE AREA ALONG THE UPPER REACHES OF THE LENA RIVER.] Doklady Irkutsk Protivochmnogo Inst. 4: 131-135. 1962. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 21I204. Transl. of Russian abstr.] WR 118: 19

Data are given on the distribution, range, and relative population size of the Asiatic gray mouse, the house mouse, the gray rat, Microtus oeconomus, the dark vole, the herd vole, Clethrionomys rutilus, C. rufocanis, the water vole, Cricetulus barabensis, Sicista betulina, Citellus undulatus, and Ochotona alpina.

McKeever, S. VARIATION IN THE WEIGHT OF THE ADRENAL, PITUITARY AND THYROID GLAND OF THE WHITE-FOOTED MOUSE PEROMYSCUS MANICULATUS. Am. J. Anat. 114(1): 1-16. Jan. 1964. [From J. Mammal. 46(1), 1965.] WR 118: 19

Mohr, Carl O., and William A. Stumpf. RELATION OF TICK AND CHIGGER INFESTATIONS TO HOME AREAS OF CALIFORNIA MEADOW MICE. J. Med. Entomol. 1(1): 73-77. 1964. [From Biol. Abstr. 45(18), 1964.] WR 118: 19

[Univ. Calif., Berkeley.]

Mosolov, L. P., B. P. Dobrokhotov, and E. A. Pronina. [SURVEY OF THE NUMBER AND EPIZOOTIC STATE OF MOUSE-LIKE RODENTS, INCLUDING WATER RATS, IN THE RSFSR (USSR) IN 1962, AND PROGNOSIS FOR 1963.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68(3): 10-13. 1963. [From Biol. Abstr. 45(13), 1964. In Russian.] WR 118: 19

Neronov, V. M. [SPECIFIC CHARACTERISTICS OF THE CHANGE IN MURINE RODENT POPULATION WITH RECLAMATION OF THE FIR-ASPEN TAIGA OF THE ALTAI AND SALAIRA FOOTHILLS.] Vest. Mosk. Univ. Ser. Geog. 5: 32-39. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 21I203. In Russian.] WR 118: 19

Nikitina, N. A., and M. A. Merkova. [TERRITORIAL OCCUPANCY BY MICE AND VOLES, BASED ON TAGGING DATA.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68(5): 15-21. 1963. [From Biol. Abstr. 45(18), 1964. In Russian.] WR 118: 19

Data in literature, as well as unpublished works of each author, are analyzed to interpret the size of individually occupied plots in relation to species, diet characteristics, season, geography, landscape and sex, as an indicator of rodent mobility.

Packchanian, Ardzroony. SUSCEPTIBILITY AND RESISTANCE OF AMERICAN RODENTS TO TRYPANOSOMA EQUIPERDUM. Texas Repts. Biol. & Med. 21(3): 380-390, illus. 1963. [From Biol. Abstr. 45(15), 1964.] WR 118: 19

[Univ. Texas, Galveston.]

Petrov, P. A., and A. A. Rozhkov. [ANNUAL FLUCTUATIONS OF THE NUMBER OF SMALL MOUSE-LIKE RODENTS IN LOWLAND LAKE AND MARINE HABITATS ALONG THE NORTHWEST CASPIAN.] Zool. Zhur. 42(6): 914-925, illus. 1963. [From Biol. Abstr. 45(15), 1964. In Russian with English summ.] WR 118: 19

Rainey, Dennis G. PARTURITION IN THE DESERT WOOD RAT. J. Mammal. 46(2): 340-341. May 1965. WR 118: 19

[Long Beach State Coll., Long Beach, Calif.] "Neotoma lepida lepida."

Raun, Gerald G., and Bobby J. Wilks. NATURAL HISTORY OF BAIOMYS TAYLORI IN SOUTHERN TEXAS AND COMPETITION WITH SIGMODON HISPIDUS IN A MIXED POPULATION. Texas J. Sci. 16(1): 28-49. 1964. [From Biol. Abstr. 45(14), 1964.] WR 118: 19

[Texas Mem. Museum, Austin.]

Ruffer, David G. BURROWS AND BURROWING BEHAVIOR OF ONYCHOMYS LEUCOGASTER. J. Mammal. 46(2): 241-247, 2 figs. May 1965. WR 118: 20
[Defiance Coll., Defiance, Ohio.] Abstract: A study of the shelter-seeking behavior of captive northern grasshopper mice was made in 15 x 15 x 3 ft sheet metal enclosures. Observations showed that grasshopper mice invariably dug their own burrows. The following types of burrows were recognized: nest burrows, retreat burrows, cache burrows and miscellaneous burrows, including those used for defecation and signposting. Records showed that the burrows provided the mouse with a refuge from extreme fluctuations of temperature. Nest burrows were dug by males with the help of females; individual mice did not dig nest burrows. The burrow entrances were not noticeably raised above the surface, and nest entrances to burrows were not in protected areas.

Schnell, Jay Heist. AN EXPERIMENTAL STUDY OF CARRYING CAPACITY BASED ON THE DISAPPEARANCE RATES OF COTTON RATS (SIGMODON HISPIDUS KOMAREKI) INTRODUCED INTO ENCLOSED AREAS OF NATURAL HABITAT. Ph.D. thesis, Univ. Ga. 63 p. 1964. [From abstr. in Dissertation Abstr. 25(10), 1965.] WR 118: 20
A study was made of the factors causing mortality and disappearance of the individuals in non-reproducing cotton rat populations which were introduced into enclosed areas of natural habitat such as islands in northern Georgia, and one-acre enclosures near Aiken, South Carolina. The use of radioactive tags facilitated the location of living animals and those dying or killed by predators. Predation was found to exert a marked effect on survival when the density of the cotton rats was above a certain level (about 12/acre), but not when it was below this level which was designated as the "predator-limited carrying capacity." During the spring and summer, other carrying capacity limitations such as emigration, food and social interactions may assume greater importance in determining density. Of these three, emigration is probably the most important since neither food nor social stress is believed to be a limiting factor until density rises one and two orders of magnitude, respectively, above the average observed level in nature.

Seabloom, Robert W. DAILY MOTOR ACTIVITY AND CORTICOSTERONE SECRETION IN THE MEADOW VOLE. J. Mammal. 46(2): 286-295, 4 figs. May 1965. WR 118: 20
[Univ. N. Dak., Grand Forks.]

Sheppe, Walter. DISPERSAL BY SWIMMING IN PEROMYSCUS LEUCOPUS. J. Mammal. 46(2): 336-337. May 1965. WR 118: 20
[Calif. Acad. Sci., San Francisco.] Studies of island populations of deer mice at Lake Opinicon, Ontario, during 1963 and 1964.

Shiraishi, Satoshi. DAMAGE OF MICE AND VOLES ON THE FRUITS OF STRAWBERRIES UNDER THE PLASTIC-COVER CULTURE AND THEIR CONTROL. Sci. Bull. Fac. Agr. Kyushu Univ. (Fukuoka) 21(1): 89-96, 2 pls. Feb. 1964. [From J. Mammal. 46 (1), 1965. In Japanese with English summ.] WR 118: 20

Shiraishi, Satoshi. ON THE COLLECTING AND REARING METHODS OF THE JAPANESE HARVEST MOUSE, MICROMYS JAPONICUS THOMAS. Sci. Bull. Fac. Agr. Kyushu Univ. (Fukuoka) 21(1): 63-72. Feb. 1964. [From J. Mammal. 46(1), 1965. In Japanese with English summ.] WR 118: 20

Shiraishi, Satoshi. SIZE OF SIX EXTERNAL CHARACTERS OF ADULT HARVEST MOUSE IN KYUSHU, JAPAN, WITH SPECIAL REFERENCE TO STATISTICAL EXAMINATION OF ITS SUBSPECIFIC CHARACTERS. Sci. Bull. Fac. Agr. Kyushu Univ (Fukuoka) 21(1): 97-109. Feb. 1964. [From J. Mammal. 46(1), 1965. In Japanese with English summ.] WR 118: 20

Shkilev, V. V. [INDEXES FOR PREDICTING THE POPULATION SIZE OF MURINE RODENTS IN THE MARITIME REGION (USSR).] Doklady Irkutsk Protivochmnogo Inst. 4: 127-131. 1962. [From Biol. Abstr. 45(16), 1964, from Referat. Zhur., Biol., 1963, no. 22I201. Transl. of Russian abstr.] WR 118: 21

As a result of a study of the fluctuations in population size of rodents from 1955 to 1961, the basic concepts for predicting the size of the populations of Apodemus agrarius, Microtus fortis pelliceus, and Cricetulus barabensis were developed. In making a prediction of an increase in population size from spring to fall, it must be taken into consideration that in favorable years the mice and voles will begin to breed earlier than usual. When the population of the animals is low, breeding begins at a high rate, but the absolute growth of the population by fall will be small. With a warm, snowy winter the rodents pass the winter more easily and begin breeding earlier in the spring. Catastrophic phenomena may cause a sharp cut in the number of rodents, but cannot cause them to appear unexpectedly. As a result the mass appearance of the rodents can always be predicted beforehand, which is of particular practical importance.

Shtil'mark, F. R. [NEW DATA ON ECOLOGY OF APODEMUS MYSTACINUS AND OCHOTONA HYPERBOREA IN THE SAYAN TAIGA.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68(5): 137-138. 1963. [From Biol. Abstr. 45(18), 1964. In Russian.] WR 118: 21

Observations were carried out in 1960-1962, with more than 700 hares and 560 forest mice captured during that period. The author discusses habitats, diet, abundance, fertility, propagation and life span.

Smirin, Yu. M. [WINTER OBSERVATIONS OF TAGGED MURINE RODENTS.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68(5): 135-136. 1963. [From Biol. Abstr. 45(18), 1964. In Russian.] WR 118: 21

Southwick, C. H. PEROMYSCUS LEUCOPUS: AN INTERESTING SUBJECT FOR STUDIES OF SOCIALLY INDUCED STRESS RESPONSES. Science 143(3601): 55-56. 3 Jan. 1964. [From J. Mammal. 46(1), 1965.] WR 118: 21

Trojan, Przemysław, and Bożena Wojciechowska. THE DISTRIBUTION OF CAPTURES OF SMALL RODENTS AND ITS CAUSES. Ekologia Polska--Ser. A. 12(21): 369-378, 4 figs. 1964. In English with Polish summ. WR 118: 21

[Biol. Field Sta., Polish Acad. Sci., Turewpow, Kościan, Poland.] Abstract: Examination was made of the distribution of captures of three species of forest rodents: Clethrionomys glareolus Schreb., Apodemus agrarius Pall. and A. flavicollis Melch. Data were collected by means of the CMR (catch, mark, release) technique, using a row of 500 live-traps. The aggregational character of the distribution of rodents is due to: 1) fortuitous meeting of high, although not exceeding the normal distribution, numbers of captures of the three species; 2) increased trapping capacity of the traps in the end segment; 3) proximity of the rodents' burrows; 4) attraction of concentrations of two or three species; 5) attachment of resident individuals to certain traps. The following further possible causes of the aggregational distribution of captures are discussed: conditioning of the traps and the path-like way in which the rodents penetrate the area.

Tropin, N. N. [EFFECT OF UNFAVORABLE CONDITIONS OF EXISTENCE ON THE GERBILS MERIONES MERIDIANUS PAL., AND M. TAMARISCINUS PAL., IN THE SOUTHEAST VOLGA-URALS SANDS.] Zool. Zhur. 42(8): 1252-1256, illus. 1963. [From Biol. Abstr. 45(17), 1964. In Russian with English summ.] WR 118: 21

RATTUS AND MUS

Hamajima, Fusanori. THE LIFE HISTORY OF THE JAPANESE MOUSE, MUS MOLOSSINUS TEMMINCK AND SCHLEGEL. XI. MEASUREMENTS OF EXTERNAL CHARACTERS, SKULL AND REPRODUCTIVE ORGANS IN ADULT MOUSE. Sci. Bull. Fac. Agr. Kyushu Univ. (Fukuoka) 21(1): 73-82. Feb. 1964. [From J. Mammal. 46(1), 1965. In Japanese with English summ.] WR 118: 22

Hamajima, Fusanori, and Yoichi Ishii. STUDIES ON THE PARASITES OF THE JAPANESE HOUSE MOUSE, MUS MOLOSSINUS. II. INTESTINAL PROTOZOA IN THE MOUSE LIVING IN TWO DIFFERENT ENVIRONMENTS AND SEASONS. Kyushu J. Med. Sci. 14(2): 55-59. 1963. [From Biol. Abstr. 45(15), 1964.] WR 118: 22
[Kyushu Univ., Fukuoka, Japan.]

Spichenko, D. A. [ON CONTROL PROCEDURES AGAINST RATTUS NORVEGICUS.] In: (Problems of zoological studies in Siberia.) Knigoizdat (Gorno-Altaisk). p. 224-226. 1962. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 19I218. Transl. of Russian abstr.] WR 118: 22

SCIURIDS

Airapet'yants, A. E. [ECOLOGY OF THE VOLANT SQUIRREL (PTEROMYS VOLANS) IN LENINGRAD OBLAST.] Vest. Leningradsk. Univ. Ser. Biol. 18(2/4): 151-155, illus. 1963. [From Biol. Abstr. 45(13), 1964. In Russian with English summ.] WR 118: 22

Alvarez, Ticul, and Clemencia E. Aviña. NOTAS ACERCA DE ALGUNAS ESPECIES MEXICANAS DE ARDILLAS DEL GENERO SCIURUS (RODENTIA: SCIURIDAE). [NOTES ON SOME MEXICAN SPECIES OF SQUIRRELS OF THE GENUS SCIURUS (RODENTIA: SCIURIDAE).] Rev. Soc. Mexicana Hist. Nat. 24: 33-39. Dec. 1963. [From J. Mammal. 46(2), 1965. In Spanish.] WR 118: 22

Armitage, Kenneth B. VERNAL BEHAVIOUR OF THE YELLOW-BELLIED MARMOT (MARMOTA FLAVIVENTRIS). Animal Behaviour 13(1): 59-68. Jan. 1965. WR 118: 22
[Univ. Kans., Lawrence.]

Bibikov, D. I. [NEW INFORMATION ABOUT THE REPRODUCTION OF MARMOTS.] In: (Notes on the 1963 scientific conference on the natural foci and prophylaxis of plague.) (Alma-Ata). p. 19-21. 1963. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 18I228. In Russian.] WR 118: 22

Gorshkov, P. K. [NOTES ON THE ACCLIMATIZATION OF SCIURUS VULGARIS EXALBIUS IN THE TATAR ASSR.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 81-82. 1963. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 18I249. In Russian.] WR 118: 22

Kapitonov, V. I. [PROSPECTS FOR THE ACCLIMATIZATION AND REACCLIMATIZATION OF MARMOTA CAMTSCHATICA IN THE USSR.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 102-103. 1963. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 18I252. In Russian.] WR 118: 22

Kizilov, V. A. [THE COMPOSITION OF RED MARMOT FAMILIES.] In: (Notes on the 1963 scientific conference on the natural foci and prophylaxis of plague.) (Alma-Ata). p. 100. 1963. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 18I225. In Russian.] WR 118: 22

Kydyrbaev, S. [THE ACCLIMATIZATION OF CITELLUS FULVUS IN KAZAKHSTAN.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 119. 1963. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 18I251. In Russian.] WR 118: 22

McKeever, S. SEASONAL CHANGES IN BODY WEIGHT, REPRODUCTIVE ORGANS, PITUITARY, ADRENAL GLANDS, THYROID GLAND AND SPLEEN OF THE BELDING GROUND SQUIRREL (CITELLUS BELDINGI). Am. J. Anat. 113(1): 153-174. July 1963. [From J. Mammal. 46(1), 1965.] WR 118: 23

Neal, Bobby J. GROWTH AND DEVELOPMENT OF THE ROUND-TAILED AND HARRIS ANTELOPE GROUND SQUIRRELS. Am. Midland Nat. 73(2): 479-489, 5 figs. Apr. 1965. WR 118: 23

[Phoenix Coll., Phoenix, Ariz.] Abstract: Captive round-tailed ground squirrel (Citellus tereticaudus neglectus) females gave birth to four litters (26 individuals), and Harris antelope squirrel (C. harrisii harrisii) to two litters (13 individuals) on which growth and development data were obtained. The round-tailed ground squirrels are larger and have the faster rate of development during their early life, as demonstrated by the earlier appearance of hair on the head, eruption of lower and upper incisors, and opening of eyes. In weight and in linear measurements, the round-tailed ground squirrels have a faster growth rate than do the Harris antelope squirrels. Linear measurements do not show this difference as readily as do weights. Rapid growth and development is a characteristic of mammals that hibernate, thus the more rapid growth rate of the round-tailed ground squirrel was explained, at least in part, when it was found that it hibernated but the Harris antelope squirrel did not.

Neal, Bobby J. REPRODUCTIVE HABITS OF ROUND-TAILED AND HARRIS ANTELOPE GROUND SQUIRRELS. J. Mammal. 46(2): 200-206. May 1965. WR 118: 23

[Phoenix Coll., Phoenix, Ariz.] Abstract: Harris antelope squirrels breed earlier and for longer periods than do the round-tailed ground squirrels in southern Arizona. Apparently, hibernation in the latter species limits its reproductive season. The mean number of young in the Harris antelope squirrel based on 34 records is 6.5; the mean number of young for the round-tailed ground squirrel based on 71 records is 6.5.

Neranov, I. M., G. P. Usachev, and E. P. Yakovlev. [ECOLOGY OF THE RED MARMOT OF THE EASTERN PAMIR RANGE.] In: (Notes on the 1963 scientific conference on the natural foci and prophylaxis of plague.) (Alma-Ata). p. 163. 1963. [From Biol. Abstr. 45(15), 1964, from Referat. Zhur., Biol., 1963, no. 18I224. In Russian.] WR 118: 23

Shtil'mark, F. R. [ECOLOGY OF THE CHIPMUNK (EUTAMIAS SIBIRICUS LAXM.) IN CEDAR FORESTS OF THE WESTERN SAYAN MOUNTAINS.] Zool. Zhur. 42(1): 92-102. 1963. [From Biol. Abstr. 45(13), 1964. In Russian with English summ.] WR 118: 23

[Inst. Wood & Forest, Siberian Div., Acad. Sci. USSR, Krasnoyarsk, USSR.]

Shubin, N. G. [REPRODUCTION OF THE CHIPMUNK IN THE TOMA RIVER BASIN.] In: (Reports of the 6th scientific conference of the Novokuznets Pedagogical Institute of the Biological Sciences.] (Novokuznetsk). p. 65-67. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1964, no. 6I321. Transl. of Russian abstr.] WR 118: 23

Tristan, D. F. [NOTES ON THE ECOLOGY OF CITELLUS FULVUS IN THE MUYUNKUM SANDS. I. THE TOPOGRAPHIC DISTRIBUTION OF C. FULVUS.] In: (Notes on the 1963 scientific conference on the natural foci and prophylaxis of plague.) (Alma-Ata). p. 227-229. 1963. [From Biol. Abstr. 45(15), 1964, from Referat. Zhur., Biol., 1963, no. 18I216. In Russian.] WR 118: 23

Varshavskii, S. N. [SOME CHARACTERISTICS OF THE ECOLOGY AND BIOCOENOTIC RELATIONSHIPS OF MILVUS KORSCHUM GM. WITH SUSLIKS IN STEPPE LANDSCAPES TOPOGRAPHY.] Zool. Zhur. 42(11): 1679-1685, illus. 1963. [From Biol. Abstr. 45(16), 1964. In Russian with English summ.] WR 118: 23

Zykov, I. V. [MIGRATIONS OF THE SQUIRREL IN THE SIBERIAN TAIGA.] In: (Conservation of nature in Siberia and the Far East.) Sibirsk. Otd. Akad. Nauk SSSR (Novosibirsk) 1: 172-173. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1964, no. 6I318. Transl. of Russian abstr.] WR 118: 24

BEAVER

Andreev, I. F. [EXPERIENCE IN REACCLIMATIZING THE BEAVER (CASTOR FIBER) IN KARELIA AND ADJOINING AREAS.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 53-56. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I261. In Russian.] WR 118: 24

D'yakov, Yu. V. [DATA ON THE BIOLOGY OF REPRODUCTION IN BEAVERS OF THE KHOPERSK POPULATION.] Trudy Khopersk Gos. Zapovednika 5: 119-129. 1961. [From Biol. Abstr. 45(16), 1964, from Referat. Zhur., Biol., 1963, no. 3I254. Transl. of Russian abstr.] WR 118: 24

Koryakov, B. F. [SOME QUESTIONS OF THE REACCLIMATIZATION OF THE BEAVER (CASTOR FIBER) IN THE URALS.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 116-117. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I260. In Russian.] WR 118: 24

Krapivnyi, A. P. [FEATURES OF THE REACCLIMATIZATION OF THE BEAVER (CASTOR FIBER) IN THE RIVER BASINS OF THE BELORUSSIA.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 118. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I262. In Russian.] WR 118: 24

Safonov, V. G. [THE RESULTS OF THE ACCLIMATIZATION AND PROSPECTS FOR THE EXPLOITATION OF THE BEAVER (CASTOR FIBER) IN THE USSR.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 159-161. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 27I257. In Russian.] WR 118: 24

Samusenko, E. G. [THE REACCLIMATIZATION OF THE BEAVER (CASTOR FIBER) IN AREAS UNDER CULTIVATION.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 155-157. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I263. In Russian.] WR 118: 24

Shaposhnikov, V. D. [BEAVER (CASTOR FIBER) IN THE TYUMEN' OBLAST.] Ezhegodnik Tyumensk Obl. Kraevedcheskogo Muz. 2: 125-132. 1960 (1961). [From Biol. Abstr. 45(15), 1964, from Referat. Zhur., Biol., 1962, no. 23I242. Transl. of Russian abstr.] WR 118: 24

Zharkov, I. V. [RESTORING THE POPULATION SIZE OF THE BEAVER (CASTOR FIBER) IN THE RSFSR AND THE PROSPECTS FOR ITS ECONOMIC EXPLOITATION.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 92-94. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I258. In Russian.] WR 118: 24

Zhdanov, A. P. [DISTRIBUTING AND STUDYING THE BEAVER (CASTOR FIBER) IN WESTERN SIBERIA.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 94-96. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I267. In Russian.] WR 118: 24

MUSKRAT AND NUTRIA

Aizin, B. M. [EXPERIENCE IN ACCLIMATIZING NUTRIA IN KIRGIZIYA.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 43-44. 1963. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 18I247. In Russian.] WR 118: 25

Cherkasskii, E. S., and S. E. Sorina. [TULAREMIA INFECTION OF THE MUSKRAT IN THE BURYAT ASSR.] Trudy Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya i Pushniny 17: 123-133. 1958. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1960, no. 15837. Transl. of Russian abstr.] WR 118: 25

Davis, R. A. FERAL COYPUS IN BRITAIN. Ann. Appl. Biol. 51: 345-348. 1963. [From J. Mammal. 46(2), 1965.[WR 118: 25

Hildén, Olavi, and Ilkka Stén. PIISAMI ULKOSAARISTON ASUKKAANA. [MUSKRAT (ONDATRA ZIBETHICA) IN THE OUTER ARCHIPELAGO.] Suomen Riista 17: 187. 1964. In Finnish with English summ. WR 118: 25

In general, the muskrat in Finland prefers inland waters and shallow sea bays rich in vegetation.--From summ.

Koenders, J. W. DE NEDERLANDSE NUTRIA-POPULATIE LANGS DE ROER VOOR EN NA DE WINTER 1962-1963. [THE DUTCH NUTRIA POPULATION ALONG THE RUR BEFORE AND AFTER THE WINTER OF 1962-1963.] Rat en Muis (Wageningen) 12(1): 9-13, illus. July 1964. [From J. Mammal. 46(2), 1965. In Dutch.] WR 118: 25

O'Neil, Ted. FUR FUTURE. La. Conserv. 17(3&4): 14-17, illus. Mar.-Apr. 1965. WR 118: 25

[Wildl. & Fisheries Bldg., 400 Royal St., New Orleans, La.] The nutria (Myocastor coypus) is now the most important fur bearing animal of La., yielding nearly three-fourths of the state's income from fur bearers. In the 1963-64 trapping season, the income from nutria pelts was $1,956,400 and from nutria meat $800,000.

Strautman, E. I. [CHANGES IN THE SIZE OF MUSKRAT POPULATIONS IN SOUTHERN KAZAKHSTAN IN RELATION TO FLUCTUATIONS IN WATER LEVELS.] Trudy Inst. Zool. Akad. Nauk Kazakhsk. SSR 17: 206-214. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 21I199. In Russian.] WR 118: 25

BEARS

Mäki, Tauno V. IHMINEN JA KARHU. [MAN AND THE BEAR.] Suomen Riista 17: 11-13. 1964. In Finnish with English summ. WR 118: 25

The Finnish bear population is threatened not so much by hunting as by the lumbering operations, the building of new roads, and other activities by which man more and more invades the last remaining wilderness areas.

RACCOON, RINGTAIL, COATI

Creed, R. F. S., and J. D. Biggers. DEVELOPMENT OF THE RACCOON PLACENTA. Am. J. Anat. 113(3): 417-446. Nov. 1963. [From J. Mammal. 46(1), 1965.] WR 118: 25

Goldushko, B. Z. [THE ACCLIMATIZATION OF THE RACCOON IN BELORUSSIA.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 79-81. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I255. In Russian.] WR 118: 25

Mech, L. David. SODIUM PENTOBARBITAL AS AN ANESTHETIC FOR RACCOONS. J. Mammal. 46(2): 343-344. May 1965. WR 118: 25

[Univ. Minn., Minneapolis.]

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Rukovskii, N. N. [THE RACCOON IN THE USSR.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 146-148. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I254. In Russian.] WR 118: 26

MUSTELIDS

Egorov, Yu. E. [INTERRELATIONS BETWEEN MUSTELA VISON AND LUTRA LUTRA IN BASHKIRIA.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 85-86. 1963. [From Biol. Abstr. 45(15), 1964, from Referat. Zhur., Biol., 1963, no. 19I180. In Russian.] WR 118: 26

Grakov, N. N. [STUDYING THE SEX AND AGE STRUCTURE OF POPULATIONS OF THE PINE MARTEN.] Sb. Nauchn.-Tekh. Inform. Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya i Pushniny 58: 3-9. 1963. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 22I214. Transl. of Russian abstr.] WR 118: 26

Jeanne, Robert L. A CASE OF A WEASEL CLIMBING TREES. J. Mammal. 46(2): 344-345. May 1965. WR 118: 26
[Box 1234, Denison Univ., Granville, Ohio.]

Monakhov, G. I., and V. V. Timofeev. [ON THE QUESTION OF FALSE RUT IN SABLES.] Sb. Nauchn.-Tekh. Inform. Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya i Pushniny 58: 30-34. 1963. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 22I216. Transl. of Russian abstr.] WR 118: 26
The increase in the volume of the testes and the activation of mobile behavior of males depend directly on day length.

Nikolaev, A. M., and V. A. Skalkin. [THE DIET OF THE KAMCHATKA SEA-OTTER IN THE KURILE ISLANDS.] Trudy Sakhalinsk. Kompleksnyi Nauchn.-Issled. Inst. 14: 54-78. 1963. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 22I217. Transl. of Russian abstr.] WR 118: 26

Walton, K. C. THE DISTRIBUTION OF THE POLECAT (PUTORIUS PUTORIUS) IN ENGLAND, WALES AND SCOTLAND, 1959-62. Proc. Zool. Soc. London 143(2): 333-336. 30 Sept. 1964. [From J. Mammal. 46(2), 1965.] WR 118: 26

Webster, W. A. SKRJABINGYLUS MAGNUS N. SP. (NEMATODA: TRICHOSTRONGYLIDAE) FROM THE SKUNK, MEPHITIS MEPHITIS. Canadian J. Zool. 43(2): 229-231, 7 figs. Mar. 1965. WR 118: 26
[Canada Dept. Agr., Hull, Quebec.] Abstract: Skrjabingylus magnus n. sp. from the frontal sinuses of Mephitis mephitis (Schreber) is described. Differences between this species and S. nasicola and S. chitwoodorum are discussed.

Webster, W. A., and M. Beauregard. DIPETALONEMA MEPHITIS N. COMB. (=MICROFILARIA MEPHITIS: WEBSTER AND BEAUREGARD, 1964) FROM THE SKUNK, MEPHITIS MEPHITIS. Canadian J. Zool. 43(2): 325-332, 11 figs. Mar. 1965. WR 118: 26
[Canada Dept. Agr., Hull, Quebec.]

DOGS, WOLVES, FOXES

Österholm, Henrick. THE SIGNIFICANCE OF DISTANCE RECEPTORS IN THE FEEDING BEHAVIOUR OF THE FOX, VULPES VULPES L. Acta Zool. Fennica 106: 1-31. 1 July 1964. [From J. Mammal. 46(2), 1965.] WR 118: 26

Smirnov, Vladimir. DETERMINATION OF THE ABUNDANCE OF THE ARCTIC FOX, ALOPEX LAGOPUS L. BY ESTIMATING THE AGE STRUCTURE OF THE CAPTURED ANIMALS. Ekologia Polska--Ser. A 12(5): 61-78, 1 fig. 1964. In English with Polish summ. WR 118: 26
[Inst. Biol., Ural Branch Acad. Sci., Sverdlosk, USSR.]

Vasenius, Helvi. MYKOPLASMOJEN (PPLO) ESIINTYMISESTÄ KETUN NENÄKUORIKOITTEN MIKROBIFLOORASSA. [ON THE OCCURRENCE OF MYCOPLASMA (PPLO) IN THE NASOTURBINAL MICROFLORA OF FINNISH RED FOXES.] Suomen Riista 17: 161-163, 1 fig. 1964. In Finnish with English summ. WR 118: 27

A search was made for the presence of mycoplasmas (PPLO) in 91 heads of wild red foxes, using Edward's PPLO medium. The organism was found in 22 samples, i.e. 24% of the material. In bacteriological routine investigations Pasteurella sp. was isolated from five foxes and Staphylococcus aureus from two. The most common organisms were coliforms (36%), streptococci (21%) and micrococci (11%). Seventeen samples (19%) were bacteriologically negative.--From summ.

CATS

Cahalane, Victor H. COUGARS IN THE U.S. ARE BARELY HOLDING THEIR OWN / A PRELIMINARY STUDY SHOWS 4,000 TO 6,500 LEFT. THE POPULATION IS MOSTLY STATIC OR DECREASING. Audubon Mag. 67(2): 108-109, illus. Mar.-Apr. 1965. WR 118: 27

[New York State Museum, Albany.] An excerpt from a report entitled A PRELIMINARY STUDY OF DISTRIBUTION AND NUMBERS OF COUGAR, GRIZZLY AND WOLF IN NORTH AMERICA, and published by the N. Y. Zool. Soc.

Pulliainen, Erkki. ILVEKSEN ESIINTYMISESTÄ SUOMESSA. [ON THE OCCURRENCE OF THE LYNX (LYNX LYNX L.) IN FINLAND.] Suomen Riista 17: 125-132, 4 figs. 1964. In Finnish with English summ. WR 118: 27

BIG GAME, GENERAL

Abramov, K. G. [WILD UNGULATES OF THE SOVIET FAR EAST.] Primorsk. Knizhoe Izd. (Vladivostok). 130 p., illus. 1963. Price 21 kopecks. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1964, no. 5I226K. Transl. of Russian abstr.] WR 118: 27

Child, Graham, and Vivian J. Wilson. OBSERVATIONS ON ECOLOGY AND BEHAVIOUR OF ROAN AND SABLE IN THREE TSETSE CONTROL AREAS. Arnoldia 1(16): 1-8, 1 fig. 29 Oct. 1964. WR 118: 27

[Natl. Museum, Bulawayo, Southern Rhodesia.] Roan antelope (Hippotragus equinus) and sable antelope (H. niger) fed almost exclusively on perennial grasses, but roans used open grassland and sables wooded areas. Differences were also observed in movement patterns. A roan herd remained within 5 miles of a waterhole for 10 months. Sable herds made seasonal movements over larger areas.

Dalke, Paul D., Robert D. Beeman, Frederic J. Kindel, Robert J. Robel, and Thomas R. Williams. SEASONAL MOVEMENTS OF ELK IN THE SELWAY RIVER DRAINAGE, IDAHO. J. Wildl. Mgmt. 29(2): 333-338, 3 figs. Apr. 1965. WR 118: 27

[Idaho Coop. Wildl. Res. Unit, Moscow.] Abstract: Seasonal movements of Rocky Mountain elk (Cervus canadensis) in the lower 35 miles of the Selway River drainage in Idaho were ascertained by pellet-group counts and 38 aerial surveys over a period of 4 years. Elk followed the retreating snow line but descended to the lower slopes with the first appearance of new growth of grasses, sedges, and forbs. Following this distinct downward trend in April, elk gradually worked upward to the summer range. The advent of herbaceous spring vegetation had a greater effect on elk movements than did artificial salt during April and May. Because of the steep topography of the Selway country, migrations from high mountain meadows to winter range do not exceed 20 miles, and for many elk the distance would not be more than 8 or 10 miles. Fall movements of elk occur not only from higher to lower elevations, but laterally along the lower slopes of the Selway River, both upstream and downstream. On 10 of 25 northside drainages, these fall and winter movements caused concentrations of elk which reached 9.1 animals per 100 acres on some winter ranges.

Dalke, Paul D., Robert D. Beeman, Frederic J. Kindel, Robert J. Robel, and Thomas R. Williams. USE OF SALT BY ELK IN IDAHO. J. Wildl. Mgmt. 29(2): 319-332, 2 figs. Apr. 1965. WR 118: 28

[Idaho Coop. Wildl. Res. Unit, Moscow.] The use of salt in the management of Rocky Mountain elk (Cervus canadensis nelsoni) in Idaho was investigated in 1955-60. Salt hunger developed in elk during May after they had been feeding on succulent forage for 2-3 weeks. The degree to which artificial salt grounds were used by elk depended chiefly on their location in respect to desired vegetation, elevation, number of migrant animals in the area, the existence of salt, and the amount of disturbance by livestock. Maximum desire for salt covered a period in late May and early June. Artificial salt blocks were consumed before there was a noticeable use of the salt-impregnated soil. In the chemical analysis of spring water from 16 samples, sodium carried in the spring waters seems to be the element attracting elk. The physical characteristics of water issuing from the licks appeared to have no relationship to its use. One hundred ninety correlations were run on the computer of five elements, bicarbonate, and sulphate in both water and soil at the natural licks, along with total soluble salts, pH, and water temperatures. Nineteen correlations were highly significant, and eight were significant. The only element that appeared in abnormally large quantities at five lick waters was fluorine, which exceeded 6 ppm. Since these natural licks were utilized only during the spring and early summer, the effects that fluoride may have on the health of big game were not determined. Dispersal of elk from natural licks by placing salt blocks in the vicinity was effective only as long as the salt blocks were present. Salt grounds established for cattle were used considerably by elk when cattle were not present. Salt placed on summer range did not induce elk to remain longer or to leave winter range earlier. No significant differences could be detected in the rate of elk movements to higher elevations from the winter range between salted and unsalted portions of the study area. (Abstract.)

DESERT BIGHORN COUNCIL, EIGHTH ANNUAL MEETING, APRIL 7-9, 1964. xxi + 181 p., mimeo. 1964. Available from Desert Bighorn Council, 1500 North Decatur Blvd., Las Vegas, Nev. WR 118: 28

Contains 21 papers, as follows: Desert bighorn sheep at the San Diego Zoological Garden, George H. Pournelle; Additional notes on parasites of bighorn sheep on the Desert Game Range, Nevada, Rex W. Allen; Long-distance and nighttime movements of desert bighorn sheep, Gale Monson; Desert bighorn management needs from the academic point of view, William Graf; Relationships between desert bighorn and feral burros in the Black Mountains of Mohave County, T. J. McMichael; Boat surveys as a technique in bighorn sheep classification counts on Lakes Mead and Mohave in Northwestern Arizona, George Welsh; The vegetation of the Desert Game Range with special reference to the desert bighorn, William G. Bradley; Progress report from the Desert Game Range, Nevada, Charles G. Hansen; A field survey of water requirements of desert bighorn sheep, Lloyd Z. Crow; Seasonal food habits of the bighorn at the Desert Game Range, Nevada, Reginald H. Barrett; Bighorn food habit-range relationships in the Silver Peak Range, Nevada, Jim Yoakum; A desert bighorn study: Part two, Norman M. Simmons; Status of transplanted bighorns in Texas, Tommy L. Hailey; Status of the bighorn sheep in Organ Pipe Cactus National Monument, Harold T. Coss, Jr.; Current status of desert bighorn sheep in New Mexico, James L. Sands; 1963 Progress and Hunt Report--Nevada, Al Ray Jonez; Range surveys in bighorn management, Charles H. Rouse; Some bighorn foods on the Desert Game Range, Oscar V. Deming; Tag-along's first year, Patricia A. Hansen; California's big game problem present and future, William P. Dasmann; The desert bighorn, Anonymous.

Egerton, P. J. Marjoribanks. THE BISON IN CANADA / HOW IT WAS SAVED FROM EXTINCTION AND ITS MANAGEMENT TODAY. Oryx 7(6): 305-314, [2 figs.] + 6 pls. Dec. 1964. WR 118: 28

Geerdes, Raymond J. SOME IDEAS ON THE FERAL GOAT CONTROL PROGRAM OF HAWAII VOLCANOES NATIONAL PARK: PAST, PRESENT AND FUTURE. p. 53-70. Mimeographed. May 1964. Available through interlibrary loan with Humboldt State Coll., Arcata, Calif. WR 118: 29

A history of methods used for controlling feral goats (Capra hircus) in the Hawaii Volcanoes National Park during 1927-63 when more than 5,000 goats were killed. Since 1955, goat control has been done entirely by uniformed park personnel.

Gizenko, A. I. [THE ACCLIMATIZATION OF THE SIBERIAN STAG (CERVUS ELAPHUS SIBERICUS) FROM THE ASKANIA-NOVA PRESERVE.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 76-78. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I252. In Russian.] WR 118: 29

Hansen, Charles G. GROWTH AND DEVELOPMENT OF DESERT BIGHORN SHEEP. J. Wildl. Mgmt. 29(2): 387-391, 2 figs. Apr. 1965. WR 118: 29

[Desert Game Range, Bur. Sport Fisheries & Wildl., Las Vegas, Nev.] Abstract: The growth and development of desert bighorn sheep (Ovis canadensis) were studied on the Desert Game Range, Nevada. A set of characteristics was developed for use by the field worker. Week-old lambs are about 16 inches high at the shoulder and weigh about 8 pounds, which differs little from their size and weight at birth. As the lamb develops, its facial characteristics, horn length, and horn shape are used to distinguish the age and sex of the animal. The horns appear on both sexes at approximately 2 months of age. The male lamb at 1 year of age is usually the size of an adult ewe while the female lamb is considerably smaller.

Harper, James A. IMMOBILIZATION OF ROOSEVELT ELK BY SUCCINYLCHOLINE CHLORIDE. J. Wildl. Mgmt. 29(2): 339-345. Apr. 1965. WR 118: 29

[Oreg. State Game Comm., Corvallis.] Abstract: From January 31, 1963, to February 15, 1964, 219 Roosevelt elk (Cervis canadensis roosevelti) in southwestern Oregon were hit with syringes containing succinylcholine chloride. Of this total, 154 animals were successfully immobilized, 6 from a 20 mg/cc concentration and 148 from a 50 mg/cc concentration. Ten mortalities occurred, one from the 20 mg/cc and nine from the 50 mg/cc solutions. Seven of the mortalities could be attributed directly to the drug, one other animal drowned, another broke its neck, and another fatally injured its head in falling. Syringes placed in the hip, shoulder, or back muscles produced the most consistent results. Neither the latent period of the drug nor the duration of paralysis of the drugged elk were affected by the sex, size, or age of the animals. The same dosage could be used successfully on 7-month-old calves and adults. The average latent period for all immobilized animals was 6 minutes. The duration of paralysis varied with the physical condition of the elk.

Hauueman, Larry E. OPERATION WILD BOAR. Tenn. Conservationist 31(6): 12-15, illus. June 1965. WR 118: 29

[Great Smoky Mountains Natl. Park, Gatlinburg, Tenn.] Since the beginning of the active control program in 1958, removal of wild boar from the Great Smoky Mountains Natl. Park totalled 177. Of these 60 were live-trapped and turned over to Tenn., 74 were live-trapped and turned over to N. C., and the remainder was eliminated by "direct reduction methods."

Korochkina, L. N. [THE REACCLIMATIZATION OF BISONS IN THE BELOVEZHSKAYA FOREST PRESERVE AND ITS OUTLOOK.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kirgizsk. SSR (Alma-Ata). p. 114-115. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 22I245. In Russian.] WR 118: 29

Lent, Peter C. OBSERVATIONS ON ANTLER SHEDDING BY FEMALE BARREN-GROUND CARIBOU. Canadian J. Zool. 43(3): 553-558, 2 figs. May 1965. WR 118: 30
[Univ. Basutoland, P. O. Roma, Maseru, Africa.] Abstract: A study of antler shedding among female barren-ground caribou in northwest Alaska revealed that, in 1961, most, but not all, barren cows shed their antlers before the start of the calving season. In contrast, almost all pregnant cows possessed antlers at the start of the calving season and retained their antlers for up to 1 week post partum. Determination of the proportion of cows with antlers at the start of the calving period provides a means of estimating the calf crop but tends to underestimate the actual natality. It is suggested that the retention of antlers by pregnant cows may be explained by the high level of estrogen production in these individuals, and that the shedding of antlers following parturition may be triggered by a rapid decrease in the output of estrogens. Similar interactions between anterior pituitary and gonadal sex hormones could account for the timing of antler shedding in both male and female caribou.

Lobachev, V. [MIGRATIONS OF THE SAIGA ANTELOPE.] Okhota & Okhotnich'e Khoz. 10: 25. 1959. [From Biol. Abstr. 45(15), 1964, from Referat. Zhur., Biol., 1960, no. 100300. Transl. of Russian abstr.] WR 118: 30

McCulloch, J. S. G., and L. M. Talbot. COMPARISON OF WEIGHT ESTIMATION METHODS FOR WILD ANIMALS AND DOMESTIC LIVESTOCK. J. Appl. Ecol. 2(1): 59-69, 2 figs. May 1965. WR 118: 30
[Hydraulics Res. Sta., Wallingford, Berkshire, England.] Summary: The use of body conformation measurements for liveweight assessment has been shown to be of more general application for East African plains animals than for domestic stock, perhaps because wild animals tend to maintain more constant condition despite marked changes in environment and in the availability of food. Chest girth has proved the most useful measurement. Liveweight prediction equations for various species are presented as linear regressions, as power law relationships and in terms of an index of body volume, $(\text{chest girth})^2 \times (\text{body length})$.

Michurin, L. N. [WILD REINDEER ON THE TAIMYR PENINSULA.] In: (Problems of zoological research in Siberia.) Knigoizdat (Gorno-Altaisk). p. 166-167. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I214. In Russian.] WR 118: 30

Naik, S. N., H. M. Bhatia, A. J. Boxi, and P. V. Naik. HEMATOLOGICAL STUDY OF INDIAN SPOTTED DEER (AXIS DEER). J. Exptl. Zool. 155(2): 231-237. Mar. 1964. [From J. Mammal. 46(1), 1965.] WR 118: 30

Neff, D. J., O. C. Wallmo, and D. C. Morrison. A DETERMINATION OF DEFECATION RATE FOR ELK. J. Wildl. Mgmt. 29(2): 406-407. Apr. 1965. WR 118: 30
[Ariz. Game & Fish Dept., Prescott.] Abstract: An elk (Cervus canadensis) pellet-group count was carried out on June 5, 1964, in the 217-acre Flagstaff Buffalo Park. Four to 10 animals on native forage over a 4-month period deposited an estimated 12.52 pellet groups per elk per day.

Pepper, Hubert J. THE PERSIAN FALLOW DEER. Oryx 7(6): 291-294, illus. Dec. 1964. WR 118: 30
There are in captivity only two Persian fallow deer (Dama mesopotamica), and there may be only 50-60 alive in the world.

Riney, Thane, and W. L. Kettlitz. MANAGEMENT OF LARGE MAMMALS IN THE TRANSVAAL. Mammalia (Paris) 28(2): 189-248, 3 pls. June 1964. [From J. Mammal. 46(1), 1965.] WR 118: 30

Salganskii, A. [A NEW METHOD OF CATCHING DEER.] Okhota & Okhotnich'e Khoz. 2: 29-30. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 16I224. Transl. of Russian abstr.] WR 118: 31

A herd of tame domestic deer are fed daily in a corral built of poles and 50 m in radius. After feed has been laid out, the deer are driven through the gate. Eventually the deer will go to the catching corral by themselves at a definite time of day. To effect a capture, a group of wild deer is sought and the domestic herd cautiously mingled with it. After grazing together for hours, the tame deer go to the corral, luring the wild deer. Mounted hunters direct the herd from a distance. By this method, 50 wild punctate deer were taken on the lowlands of the Lower Dnieper River.

Solomatin, A. O. [THE ONAGER (EQUUS) AND ITS REACCLIMATIZATION IN THE USSR.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kirgizsk. SSR (Alma-Ata). p. 172-174. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 22I242. In Russian.] WR 118: 31

Teplov, V. P. [THE ACCLIMATIZATION AND REACCLIMATIZATION OF UNGULATES IN THE RUSSIAN SOCIALIST SOVIET FEDERATED REPUBLIC AND ITS PROSPECTS.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 180-182. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I249. In Russian.] WR 118: 31

Treus, V. D. [THE RESTORATION OF THE PRZHEVALSKY HORSE.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 185-186. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 22I243. In Russian.] WR 118: 31

Treus, V. D., and N. V. Lobanov. [THE ACCLIMATIZATION OF ZEBRAS AT THE ASKANIA-NOVA PRESERVE.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 189-190. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I251. In Russian.] WR 118: 31

Treus, V. D., and N. V. Lobanov. [RAISING WILD UNGULATES IN THE ASKANIA-NOVA PRESERVE AS A BASIS FOR EXPERIMENTS IN ACCLIMATIZING THEM.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 191-192. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I250. In Russian.] WR 118: 31

Watson, R. M., and O. Kerfoot. A SHORT NOTE ON THE INTENSITY OF GRAZING OF THE SERENGETI PLAINS BY PLAINS-GAME. Z. Säugetierk. 29(5): 317-320. Sept. 1964. [From J. Mammal. 46(2), 1965.] WR 118: 31

Woodgerd, Wes. NATURE'S DEER HARVEST. Mont. Wildl. p. 8-9, illus. Spring 1964. WR 118: 31

[Mont. Fish & Game Dept., Helena.] In 1954 on Wildhorse Island (a 2500-acre island in Flathead Lake, Mont.) there were an estimated 500 mule deer, 80 horses, and 100 bighorns. Without hunting or management (other than removal of some of the horses not dying of starvation) the island population declined by 1964 to 150 mule deer, 3 horses, and 100 bighorns. Observations were made on the mule deer fawn crops at different stages of the population decline.

Yocom, Charles F. ECOLOGICAL STUDY OF FERAL GOATS ON UNITED STATES NATIONAL PARK LANDS IN HAWAII. p. 1-52, 9 figs. Mimeographed. May 1964. Available through interlibrary loan with Humboldt State Coll., Arcata, Calif. WR 118: 31

To provide a background for an evaluation of the feral goat (Capra hircus) management program on national parks in the Hawaiian Islands, the author visited the channel islands off the coast of southern Calif. where overgrazing by sheep and goats occurs or has occurred. It was concluded "that the only solution to the very difficult problem resulting from having feral goats ranging over the lands of Haleakala National Park is to eliminate all goats

from this land that has the highest priority for scenic values of volcanic features and for saving native Hawaiian plants for perpetuity." A brief history of domestication of the goat and of the feral goat population on the Hawaiian Islands is included.

Zablotskii, M. A. [BISON RESTORATION WORK IN THE USSR.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 96-100. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 22I244. In Russian.] WR 118: 32

DEER (Odocoileus)

Anderson, Allen E., Walter A. Snyder, and George W. Brown. STOMACH CONTENT ANALYSES RELATED TO CONDITION IN MULE DEER, GUADALUPE MOUNTAINS, NEW MEXICO. J. Wildl. Mgmt. 29(2): 352-366, 6 figs. Apr. 1965. WR 118: 32

[Colo. Game, Fish & Parks Dept., Fort Collins.] Abstract: An index to the food habits of a nonmigratory mule deer (Odocoileus hemionus) population occupying a juniper-pinyon woodland, succulent-shrub, and shortgrass-shrub complex in southeastern New Mexico was provided by botanical analyses of 93 stomach content samples. Thirty-nine males and 54 females were obtained by shooting approximately 2 deer per month over a 49-month period. Of the total estimated volume of stomach contents, browse made up about 70 percent; forbs, 26; and grass and unidentified plant material the remainder. The five major food items, comprising about 64 percent of the total, were wavyleaf oak (Quercus undulata), juniper (Juniperus spp.), hairy cercocarpus (Cercocarpus breviflorus), yucca (Yucca spp.), and unidentified forbs, in order of decreasing percent volume. Juniper was the highest in total frequency with less variability and was the major item during the January-March period. Wavyleaf oak was the major item from April through December. When unusually heavy precipitation increased all forage--especially forb production in 1958-59--forbs exceeded both browse and grass components yearlong. Females of all age-classes collected during, and for several months after, this period were significantly heavier ($P = 0.05$) and presumably in better physical condition.

Elder, William H. PRIMEVAL DEER HUNTING PRESSURES REVEALED BY REMAINS FROM AMERICAN INDIAN MIDDENS. J. Wildl. Mgmt. 29(2): 366-370, 3 figs. Apr. 1965. WR 118: 32

[Univ. Mo., Columbia.] Abstract: Deer jaws from Indian middens were available from five populations in Missouri--three from the prehistoric period, two from the historic. Two contemporary samples from areas where any deer is legal game were used for comparison. Findings led to three conclusions: (1) The Indian kill of fawns was very light, never exceeding 8 percent of the total sample (in modern times fawns make up 30 percent of the hunting bag), which may have been a voluntary conservation practice among a people dependent upon deer as an important item of food and clothing. (2) Modern deer populations are being more closely cropped than were those hunted by Indians. (3) The proportion of old deer in the harvest (6.5 years or more) is declining. At the three prehistoric sites this proportion ranged from 20 to 26 percent; at the two historic sites it was 3 and 11 percent; modern white man's kill is only 2 percent old deer. The more rapid population turnover in contemporary deer populations indicates that white man's equipment and rapid transportation enable him to exert greater hunting pressure during a 1-week hunting season than Indians did by hunting the year round.

Lay, Daniel W. FRUIT UTILIZATION BY DEER IN SOUTHERN FORESTS. J. Wildl. Mgmt. 29(2): 370-375. Apr. 1965. WR 118: 33

[Texas Parks & Wildl. Dept., Buna.] Abstract: Examination of the woody seed content of 2,295 deer (Odocoileus virginianus) pellet groups, collected on four study areas in the forests of eastern Texas over a period of 7 years (1956-63), disclosed 69 identifications for 100 pellet groups. The most frequently identified species or genera were oaks (Quercus spp.), yaupon (Ilex vomitoria), American beautyberry (Callicarpa americana), black tupelo (Nyssa sylvatica), and hawthorn (Crataegus spp.). Inspection of the contents of 49 stomachs from one study area in 1963 revealed an oak species present in every stomach. Deer on ranges with a large variety of hardwoods of fruit-producing sizes consumed more fruit than did deer on ranges with fewer hardwoods, indicating that utilization was an obvious reciprocal of availability.

Michael, Edwin D. CHARACTERISTICS OF SHED ANTLERS FROM WHITE-TAILED DEER IN SOUTH TEXAS. J. Wildl. Mgmt. 29(2): 376-380. Apr. 1965. WR 118: 33

[Stephen F. Austin State Coll., Nacogdoches, Texas.] Abstract: During a 2-year period, 155 shed antlers of white-tailed deer (Odocoileus virginianus) were collected on the Welder Wildlife Refuge in south Texas. Of the 155 antlers, 14.8 percent had been chewed slightly by deer or rodents and only 5.8 percent chewed heavily. Deer alone chewed on 15.5 percent of the antlers and rodents alone on only 1.9 percent. The longer an antler was exposed in the field, the more likely it would be chewed. The size of the antler had no relation to its chances of being chewed but was important for its being found by humans. Scarcity of rodents and abundance of minerals were probably the two main reasons why so few antlers were chewed.

Ransom, A. Brian. KIDNEY AND MARROW FAT AS INDICATORS OF WHITE-TAILED DEER CONDITION. J. Wildl. Mgmt. 29(2): 397-398, 1 fig. Apr. 1965. WR 118: 33

[Manitoba Wildl. Branch, Winnipeg, Canada.] Abstract: Comparisons of kidney fat indices and fat content of femur marrow from 34 female white-tailed deer (Odocoileus virginianus) showed that kidney fat is not a reliable indicator of physical condition during mobilization of femur marrow fat. A method involving the complementary use of the two measurements is suggested as a means of assessing physical condition over its entire range.

Short, Henry L., Dean E. Medin, and Allen E. Anderson. RUMINORETICULAR CHARACTERISTICS OF MULE DEER. J. Mammal. 46(2): 196-199. May 1965. WR 118: 33

[Southern Forest Expt. Sta., Nacogdoches, Texas.] Abstract: The combined rumen-reticulum of 30 mule deer (Odocoileus hemionus), collected throughout 1962, was excised and examined. Several relationships between the rumen-reticulum and body weight are described and compared to published data for the domestic cow. The volume of the mule deer rumen-reticulum is about 10% of body weight, and rumen-reticulum contents and dry matter are about 7.4% and 1%, respectively, of body weight. The relatively small size of the deer rumen seems to have important physiological implications.

Sittler, O. Dayle. THEORETICAL BASIS FOR ESTIMATING DEER POPULATION FROM AUTOMATICALLY COLLECTED DATA. J. Wildl. Mgmt. 29(2): 381-387, 2 figs. Apr. 1965. WR 118: 33

[Texas A & M Univ., College Station.] Abstract: Development of devices for automatically detecting and counting the passage of deer (Odocoileus virginianus) across a fixed boundary line is currently being carried out at the Welder Wildlife Foundation. A theory for combining data from such a line-crossing detector with knowledge about behavior of deer to yield an estimate for deer population density was derived by developing a simple model for the behavior pattern of a deer in which a deer's movements were considered as a sequence of trips. This behavior model has been analyzed to find a relation for population density in terms of the number of trips crossing a line-crossing detector. The population density would then be given by the number of counts

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per unit length of boundary line divided by a factor depending upon the average behavior pattern of deer in the region around the detector. The largest errors in a census estimate based upon this technique would arise from the variability of behavior patterns. New knowledge about the effects of weather and other environmental factors on behavior patterns can be incorporated into the analysis to improve the reliability of census estimates.

Thomas, Jack Ward, R. M. Robinson, and R. G. Marburger. SOCIAL BEHAVIOR IN A WHITE-TAILED DEER HERD CONTAINING HYPOGONADAL MALES. J. Mammal. 46(2): 314-327, 6 figs. May 1965. WR 118: 34

[Texas Parks & Wildl. Dept., Llano.] Abstract: During a 14-month period weekly observations were made of the social behavior of a deer herd containing 10% male deer suffering from hypogonadism. Social relationships were divided into two categories: those relationships affected by sexual activities of normal deer and those not so affected. Definite social hierarchy was evident on feeding grounds and was based on frequent aggressive-submissive interactions. Aggression was much more pronounced during the period of sexual activity which coincided with the period of maximum food shortage. Normal males used a sequential pattern of aggressive threats which included the "ear-drop," the "hard look," the "sidle," the "head threat" and the "rush." Females also used a sequential pattern of threat postures and action similar to that of males, except that a "strike" and "flailing" with the front feet replaced the threats with antlers employed by males. "Velvet-horns" or hypogonadals were inferior in the "peck order" to all normal deer. Normal males, especially during rut, were more aggressive toward "velvet-horns" than toward any other deer. Normal deer used a sequential pattern of alarm behavior: "stamping" with the front feet, "snorting," "whistling" and flight with erection of the tail. "Velvet-horns" did not employ any of these alarm actions but merely fled from danger.

Zalunardo, Raymond A. THE SEASONAL DISTRIBUTION OF A MIGRATORY MULE DEER HERD. J. Wildl. Mgmt. 29(2): 345-351, 2 figs. Apr. 1965. WR 118: 34

[Umpqua Natl. Forest, Roseburg, Oreg.] Abstract: Rocky Mountain mule deer (Odocoileus hemionus) were trapped, marked, and released on the Silver Lake winter range in south-central Oregon, and their subsequent movements were observed from June, 1960, through October, 1963, to determine ranging habits. A total of 752 deer were marked on four areas of the winter range, and an estimated 497 were later observed on the summer range. The summer range of marked animals encircled the winter range, except that no animals summered in areas northeast of the winter range because of lack of suitable habitat. The largest percentage of animals summered in areas south, southwest, and west, and within 30 miles of the winter range. Deer from any one of the four trapping areas did not move to a particular part of the summer range but were found throughout the area. The average size of the summer range for individual mule deer of the Silver Lake herd was approximately 1 square mile. Individual movement on the winter range was determined by retrapping. The mean movement of animals on the winter range was less than one-fourth mile from the point of original capture. Individual deer returned to the same area of the winter range each year.

MAMMALS--MARINE

Bakken, Asbjørn. ONE HUNDRED YEARS OF NORWEGIAN WHALING. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 53(5): 122-137. May 1964. [From J. Mammal. 46(1), 1965.] WR 118: 34

Conway, William G. A DAY IN A PATAGONIAN ELEFANTERIA--COUNTING ELEPHANT SEALS ON PUNTA NORTE. Animal Kingdom 68(1): 2-12, illus. Jan.-Feb. 1965. WR 118: 34

[N. Y. Zool. Park, Bronx.] The tally of Mirounga leonina was 1387 as contrasted with an estimate of 220 for the same area made in 1954. Considerable information on the biology and behavior of the elephant seal are presented.

Csordas, S. E. LEOPARD SEALS ON MACQUARIE ISLAND. Victorian Nat. 79(12): 358-362, illus. 1963. [From Biol. Abstr. 45(13), 1965.] WR 118: 35
A summary of information on the habits and life history of Hydrurga leptonyx.

DeVries, Arthur L., and Donald E. Wohlschlag. DIVING DEPTHS OF THE WEDDELL SEAL. Science 145(3629): 292 17 July 1964. [From J. Mammal. 46(2), 1965.] WR 118: 35

Flyger, Vagn. SUCCINYLCHOLINE CHLORIDE FOR KILLING OR CAPTURING WHALES. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 53(4): 88-90, illus. Apr. 1964. [From J. Mammal. 46(1), 1965.] WR 118: 35

Flyger, Vagn, Murray S. R. Smith, Robert Damm, and Richard S. Peterson. EFFECTS OF THREE IMMOBILIZING DRUGS ON WEDDELL SEALS. J. Mammal. 46(2): 345-347. May 1965. WR 118: 35
[Univ. Md., College Park.] "Nicotine was the least satisfactory drug because it often caused convulsions. The drug of choice for Weddell seals would be either phencyclidene or succinylcholine, depending upon the needs of the investigator. Phencyclidene can be administered in successive dosages until the desired effect is attained."

Hancock, David. KILLER WHALES KILL AND EAT A MINCKE WHALE. J. Mammal. 46(2): 341-342. May 1965. WR 118: 35
[Univ. British Columbia, Vancouver.]

Jewell, P. A., and E. A. Smith. IMMOBILIZATION OF GREY SEALS. J. Wildl. Mgmt. 29(2): 316-318. Apr. 1965. WR 118: 35
[Wellcome Inst. Comp. Physiol., Regent's Park, London, N.W. 1, England.] Abstract: To immobilize grey seals (Halichoerus grypus) for marking, the Cap-Chur gun was used with two analogues of succinylcholine--suxamethonium, the methyl derivative, and suxethonium, the ethyl derivative. A modified needle was developed to hold in the seals' hide even when the syringe struck at an angle. Experiment determined that an effective dosage of the drugs used gave erratic results because the seals' 2-inch-thick layer of subcutaneous fat made it difficult to inject directly into the muscle and because these drugs were not sufficiently quick acting to prevent a seal's escape before immobilization was accomplished. The projectile syringe technique may have wider application with other drugs.

Jönsgard, Åge. ANTARCTIC FIN WHALES WITH EXCEPTIONALLY LONG BALEEN PLATES. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 53(5): 117-121. May 1964. [From J. Mammal. 46(1), 1965.] WR 118: 35

Kellogg, W. N., and C. E. Rice. VISUAL PROBLEM-SOLVING IN A BOTTLENOSED DOLPHIN. Science 143(3610): 1052-1055. 6 Mar. 1964. [From J. Mammal. 46(1), 1965.] WR 118: 35

Mackay, Stuart. DEEP BODY TEMPERATURE OF UNTETHERED DOLPHIN RECORDED BY INGESTED RADIO TRANSMITTER. Science 144(1620): 864-866. 15 May 1964. [From J. Mammal. 46(1), 1965.] WR 118: 35

Nemoto, Takahisa. SCHOOL OF BALEEN WHALES IN THE FEEDING AREAS. Sci. Repts. Whales Res. Inst. (Tokyo) 18: 89-110. Mar. 1964. [From J. Mammal. 46 (2), 1965.] WR 118: 35

O'Gorman, Fergus. THE RETURN OF THE ANTARCTIC FUR SEAL. New Scientist 20 (365): 374-376. 14 Nov. 1963. [From J. Mammal. 46(2), 1965.] WR 118: 35

Okutani, Takashi, and Takahisa Nemoto. SQUIDS AS THE FOOD OF SPERM WHALES IN THE BERING SEA AND ALASKAN GULF. Sci. Repts. Whales Res. Inst. (Tokyo) 18: 111-122, 5 pls. Mar. 1964. [From J. Mammal. 46(2), 1965.] WR 118: 35

Omura, Hideo, and Seiji Ohsumi. A REVIEW OF JAPANESE WHALE MARKING IN THE NORTH PACIFIC TO THE END OF 1962, WITH SOME INFORMATION ON MARKING IN THE ANTARCTIC. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 53(4): 90-112. Apr. 1964. [From J. Mammal. 46(1), 1965.] WR 118: 36

Ray, Carleton. PHYSIOLOGICAL ECOLOGY OF MARINE MAMMALS AT McMURDO SOUND, ANTARCTICA. BioScience 15(4): 274-277, 7 figs. Apr. 1965. WR 118: 36
[New York Aquarium, New York, N. Y.] Abstract: A critique of physiological ecology of marine mammals, particularly the Weddell Seal, is given as applied to marine mammalogy in general and the location of McMurdo Sound and Station in particular. The uniqueness of a marine mammal species which is highly tractable in nature in conjunction with a modern biological laboratory is pointed out. Our work in bio-acoustics, microbiology, thermoregulation, nutrition, fat metabolism, and parasitology is briefly presented.

Ray, Carleton, and William E. Schevill. THE NOISY UNDERWATER WORLD OF THE WEDDELL SEAL (PART 1). Animal Kingdom 68(2): 34-39, illus. Mar.-Apr. 1965. WR 118: 36
[New York Aquarium, New York, N. Y.] A popular account of methods and equipment used for study of sounds produced by the Weddell seal (Leptonychotes weddelli).

Street, R. J. FEEDING HABITS OF THE NEW ZEALAND FUR SEAL (ARCTOCEPHALUS FORSTERI). Fisheries Tech. Rept., New Zealand Marine Dept. (Wellington) 9: 1-20. 1964. [From J. Mammal. 46(2), 1965.] WR 118: 36

MAMMALS--OTHER GROUPS

Broadbooks, Harold E. ECOLOGY AND DISTRIBUTION OF THE PIKAS OF WASHINGTON AND ALASKA. Am. Midland Nat. 73(2): 299-335, 15 figs. Apr. 1965. WR 118: 36
[Southern Ill. Univ., Alton.] The main purpose of this study was to census the pikas and their haypiles, map their local distribution, and to compare the behavior and ecology of the northern Ochotona collaris and the more southern O. princeps. The animals were observed during July and August of 1959, 1961, and 1962 at two localities in the Cascade Mountains of Washington; at three places in the Rocky Mountains of Colorado, Wyoming, and Alberta; and in Mt. McKinley National Park, Alaska. The physical differences between the northern and southern pikas are so slight and ecology and behavior so much alike that the two populations may belong to a single species, Ochotona princeps.--From abstr.

Brown, Larry N. STATUS OF OPOSSUM, DIDELPHIS MARSUPIALIS, IN WYOMING. Southwestern Nat. 10(2): 142-143. 30 Apr. 1965. WR 118: 36
[Univ. Wyo., Laramie.] Documentation of spread of opossum into Wyoming [Goshen County].

Holmes, Ann C. V., and Glen C. Sanderson. POPULATIONS AND MOVEMENTS OF OPOSSUMS IN EAST-CENTRAL ILLINOIS. J. Wildl. Mgmt. 29(2): 287-295. Apr. 1965. WR 118: 36
[Ill. Nat. Hist. Surv., Urbana.] Abstract: Four hundred forty-six opossums (Didelphis marsupialis) were livetrapped and marked in an area of about 2.8 square miles of uncultivated land in east-central Illinois. In this favorable habitat, the estimated population at midsummer was about 300 opossums per square mile. Sex ratios were apparently about even, although adult males were caught relatively less frequently than females and young. Seventy-five percent of the adult females examined had pouch young at some time during the year. The average number of young per litter was 7.9. Some females had two litters in one season. The average distance between capture site and center of activity was determined for each of 74 opossums; the mean of these averages was 697 feet. Distances between captures in live traps on successive nights were measured for 41 opossums; the average of the 77 distances was 748 feet.

Both methods of estimating relative mobility indicated that adult males were much more mobile than adult females and juveniles. One of the two opossums tracked by radio did not appear to have a well-established home range, but radio-tracking data from the second one corroborated the previously collected trapping data.

Tigges, Johannes. ON VISUAL LEARNING CAPACITY, RETENTION AND MEMORY IN TUPAIA GLIS DIARD 1820. Folia Primatologica (Basel) 2(4): 232-245. 1964. [From J. Mammal. 46(2), 1965.] WR 118: 37

BIRDS--GENERAL

Garanin, V. I. [ON THE ROLE OF AMPHIBIANS IN THE LIFE OF BIRDS.] Akad. Nauk SSSR (Moscow). p. 112-126. 1964. [From Ibis 107(1), 1965. In Russian.] WR 118: 37

Based on the author's own investigations and literature sources the role of amphibians in the foods of birds is discussed including a long table of species. Five pages of literature contain almost all that has been published of this problem in the U.S.S.R. and abroad.

Gullion, Gordon W. ANOTHER COMMENT ON THE COLOR-BANDING OF BIRDS. J. Wildl. Mgmt. 29(2): 401. Apr. 1965. WR 118: 37

[Forest Res. Center, Univ. Minn., Cloquet.] Abstract: Colored, pressure-sensitive tape wrapped around unmarked butt-end aluminum bands permits quick and inexpensive marking of birds for individual identification.

Kokhanov, V. D. [PASSERINE BIRDS FOUND AT SEA.] Priroda 11: 108-109. 1959. [From Biol. Abstr. 45(16), 1964, from Referat. Zhur., Biol., 1960, no. 100204. Transl. of Russian abstr.] WR 118: 37

Markov, V. I. [GEOGRAPHICAL AND LOCAL VARIABILITY IN THE FERTILITY OF BIRDS.] In: (Zoogeography of the land.) (Tashkent). p. 186-187. 1963. [From Biol. Abstr. 45(19), 1964, from Referat. Zhur., Biol., 1964, no. 8I158. In Russian.] WR 118: 37

Mezhennyi, A. A. [THE RESULTS OF BANDING SEVERAL SPECIES OF BIRDS FROM 1957 TO 1960 AT THE BIOLOGICAL STATION OF THE INSTITUTE OF ZOOLOGY OF THE ACADEMY OF SCIENCES OF THE USSR AT RYBACHE.] Soobshch. Pribaltiisk Komissii Po Izucheniyu Migratsii Ptits Akad. Nauk Estonsk SSR 2: 3-11. 1963. [From Biol. Abstr. 45(19), 1964, from Referat. Zhur., Biol., 1964, no. 5I118. Transl. of Russian abstr. Original with English summ.] WR 118: 37

Onno, S. [THE TIME OF NIDIFICATION AND THE NUMBER OF EGGS (SIZE OF THE EGG CLUTCH) IN BIRD POPULATIONS.] In: (Summaries of the reports of the Fifth Baltic Ornithological Conference.) (Tartu). p. 166-167. 1963. [From Biol. Abstr. 45(19), 1964, from Referat. Zhur., Biol., 1964, no. 8I159. In Russian.] WR 118: 37

Padutov, E. E. [VARIABILITY IN THE NUMBER OF EGGS (SIZE OF THE EGG CLUTCH) AND THE SIZE OF THE EGGS OF SOME LAKE BIRDS.] In: (Summaries of the reports of the Fifth Baltic Ornithological Conference.) (Tartu). p. 150. 1963. [From Biol. Abstr. 45(19), 1964, from Referat. Zhur., Biol., 1964, no. 8I160. In Russian.] WR 118: 37

Sladen, W. J. L. ORNITHOLOGICAL RESEARCH IN ANTARCTICA. BioScience 15(4): 264-268, 6 figs. Apr. 1965. WR 118: 37

[Johns Hopkins Univ., Baltimore, Md.] Abstract: Antarctic birds are ideal subjects for long-term population and behavioral studies. Marking techniques are elucidating some of their fascinating long-distance movements, ecological adaptations, and social behavior. More research is needed in experimental ethology, physiology, and biochemistry. Disease processes have barely been studied, yet the travels of some species show that they are important links between the so-called isolated Antarctic Continent and the rest of the world.

Van Velzen, Willet T. TABULATIONS OF BANDINGS REPORTED EACH BANDING YEAR 1950 TO 1953. Bird Banding Notes 5(1): 5-18. Dec. 1964. WR 118: 38
[Point Reyes Bird Observatory, Inverness, Calif.] This is the first issue released of this series since August 1950 and it includes a grand total for all birds handled through 1950 in addition to the yearly totals. This was assembled from records compiled by the late Seth H. Low. In the previous issue Bird Banding Notes 4(3), Mr. Low presented a tabulation of bandings reported from 1942 to 1949.

Van Velzen, Willet T. SUMMARIES OF NON-GAME SPECIES BANDED FROM 1954 THROUGH 1962. Bird Banding Notes 5(2): 3-27. Apr. 1965. WR 118: 38
[Point Reyes Bird Observatory, Inverness, Calif.] Includes summaries of birds banded during 1954 through 1962, and grand totals of these figures combined with the previous grand totals tabulated in Bird Banding Notes 5(1).

BIRDS--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Amadon, D. THE EVOLUTION OF LOW REPRODUCTIVE RATES IN BIRDS. Evolution 18: 105-110. 1964. [From Ibis 107(1), 1965.] WR 118: 38

Anderson, Anders H. NOTES ON THE BEHAVIOR OF THE RUFOUS-WINGED SPARROW. Condor 67(2): 188-190. Mar.-Apr. 1965. WR 118: 38
[Tucson, Ariz.] Chiefly on singing behavior of Aimophila carpalis. Singing occurred during every month of the year.

Arnaud, P., R. Guillard, and J. Prévost. OBSERVATIONS ÉCOLOGIQUES À LA COLONIE DE MANCHOTS EMPEREURS DE POINTE GÉOLOGIE (TERRE ADÉLIE) EN 1962 ET 1963. [ECOLOGICAL OBSERVATIONS OF A COLONY OF EMPEROR PENGUINS AT POINTE GÉOLOGIE (ADELIE LAND) DURING 1962-1963.] Oiseau 34, suppl.: 2-51. 1964. [From Ibis 107(1), 1965. In French.] WR 118: 38

Banks, Richard C., and Robert T. Orr. AN UNUSUAL HABITAT FOR PURPLE MARTINS. Auk 82(2): 271-273, 2 figs. Apr. 1965. WR 118: 38
[Nat. Hist. Museum, San Diego, Calif.] A colony of about 50 purple martins (Progne subis) was found on Cayo Island, Baja, Calif., presumably nesting in crevices on the steep side of the island.

Bligh, John, and T. Carr Hartley. THE DEEP BODY TEMPERATURE OF AN UNRESTRAINED OSTRICH STRUTHIO CAMELUS RECORDED CONTINUOUSLY BY A RADIO-TELEMETRIC TECHNIQUE. Ibis 107(1): 104-105, 1 fig. Jan. 1965. WR 118: 38
[A.R.C. Inst. Animal Physiol., Babraham, Cambridge, England.]

Blume, D. DIE JÄHRESPERIODIK VON AKTIVITÄTSBEGINN UND -ENDE BEI EINIGEN SPECHTARTEN. [THE ANNUAL CYCLE OF MORNING AND EVENING ACTIVITIES OF SOME WOODPECKERS, PARTS 1 AND 2.] Vogelwelt 84: 161-184. 1963; 85: 11-19. 1964. [From Ibis 107(2), 1965. In German.] WR 118: 38

Brush, Alan H. THE STRUCTURE AND PIGMENTATION OF THE FEATHER TIPS OF THE SCALED CUCKOO (LEPIDOGRAMMUS CUMINGI). Auk 82(2): 155-160, 2 figs. Apr. 1965. WR 118: 38
[Cornell Univ., Ithaca, N. Y.]

Cooch, F. G. AN EXAMPLE OF SINISTRALISM IN RED PHALAROPES (PHALAROPUS FULICARIUS). Auk 82(2): 276-277. Apr. 1965. WR 118: 38
[Canadian Wildl. Serv., 150 Wellington St., Ottawa, Ontario.] In 84 observations 17% of the circling of red phalaropes was to the left and 83% was to the right.

Dementev, G. P., and V. D. Ilichev. [THE VOICE OF BIRDS, AND SOME OF THE PROBLEMS OF STUDYING IT.] Ornitologia 6: 401-407. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 38

Dillery, Dean G. POST-MORTEM DIGESTION OF STOMACH CONTENTS IN THE SAVANNAH SPARROW. Auk 82(2): 281. Apr. 1965. WR 118: 39
[Albion Coll., Albion, Mich.] Unless digestion is halted immediately or soon after a bird is killed, stomach examinations give a biased picture of food habits. Soft-bodied invertebrates decline in relative importance.

Dow, Douglas D. THE ROLE OF SALIVA IN FOOD STORAGE BY THE GRAY JAY. Auk 82(2): 139-154, 3 figs. Apr. 1965. WR 118: 39
[Univ. Western Ontario, London, Ontario, Canada.] Jays of the genus Perisoreus possess large mandibular salivary glands. Studies on caged P. canadensis suggested that salivary secretions are used by these jays in forming boli and in cementing the boli to leaves and bark of trees. The boli are probably later utilized when food is otherwise scarce. It is postulated that these adaptations for food-storing may enable gray jays to winter in boreal regions.

Driver, Peter M. 'CLICKING' IN THE EGG-YOUNG OF NIDIFUGOUS BIRDS. Nature 206(4981): 315. 17 Apr. 1965. WR 118: 39
[Oxlynch near Stonehouse, Gloucestershire, England.] "The evidence suggests that 'clicking' is a side-effect of the newly functioning respiratory system. It is distinct from the sounds of shell rupture and vocalization that are also produced by egg-young at this stage of development."

Dunson, William A. ADAPTATION OF HEART AND LUNG WEIGHT TO HIGH ALTITUDE IN THE ROBIN. Condor 67(3): 215-219. May-June 1965. WR 118: 39
[Univ. Mich., Ann Arbor.] Heart and lung weights were significantly greater in both adult and immature montane robins (Turdus migratorius propinquus) than in lowland robins (T. m. migratorius).

Picken, Millicent S., and Robert W. Picken. TERRITORIAL DISPLAY AS A POPULATION-REGULATING MECHANISM IN THE YELLOW WARBLER. Auk 82(2): 274-275, 1 fig. Apr. 1965. WR 118: 39
[Univ. Md., College Park.] A singing male yellow warbler (Dendroica petechia) was displaced by two nearby males. The displaced male appeared to be unmated and to lack a suitable singing perch. There was no fighting among the trio of males, and displacement was achieved by display.

Géroudet, P. NOTES SUR LE NID ET LES "COLLECTIONS" DE LA SITTELLE DES ROCHERS. [NOTES ON THE NEST AND THE "COLLECTIONS" OF SITTA NEUMAYER.] Nos Oiseaux 27: 272-276. 1964. [From Ibis 107(2), 1965. In French.] WR 118: 39

Gizenko, A. I. [THE NESTING OF PLEGADIS FALCINELLUS ON THE DNIEPER.] Ornitologia 6: 469. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 39

Gollop, J. B. SNOWY OWLS AND GRAY PARTRIDGE NEAR SASKATOON IN THE WINTER OF 1963-1964. Blue Jay 23(1): 28-31, illus. Mar. 1965. WR 118: 39
[Saskatoon, Saskatchewan, Canada.] Observations indicated that snowy owls (Nyctea scandiaca) did not concentrate in areas with denser populations of gray partridges (Perdix perdix).

Gollop, Michael A. BIRD MIGRATION COLLISION CASUALTIES AT SASKATOON. Blue Jay 23(1): 15-17. Mar. 1965. WR 118: 39
[Saskatoon, Saskatchewan, Canada.] Includes data from television and radio towers and power lines for years 1961-64.

Hardy, John William. FLOCK SOCIAL BEHAVIOR OF THE ORANGE-FRONTED PARAKEET. Condor 67(2): 140-156, 2 figs. Mar.-Apr. 1965. WR 118: 39
[Occidental Coll., Los Angeles, Calif.] Observations on captive Aratinga canicularis.

Heatwole, Harold. SOME ASPECTS OF THE ASSOCIATION OF CATTLE EGRETS WITH CATTLE. Animal Behaviour 13(1): 79-83. Jan. 1965. WR 118: 40
[Univ. Puerto Rico, Rio Piedras.] Summary: Cattle egrets associated with cattle receive the two-fold advantage of obtaining 1.25 to 1.5 times as much food and expending approximately 0.67 as much energy per unit time as non-associated egrets. Egrets tend to associate with cattle that are grazing in the sun rather than with cattle in the shade or those engaged in other activities.

Heppner, Frank. SENSORY MECHANISMS AND ENVIRONMENTAL CLUES USED BY THE AMERICAN ROBIN IN LOCATING EARTHWORMS. Condor 67(3): 247-256, 3 figs. May-June 1965. WR 118: 40
[Univ. Calif., Davis.] "The experiments reported here when considered collectively lead to the conclusion that the American Robin locates worms exclusively by visual clues. The olfactory and auditory senses seem not to be involved in worm finding."

Hetrick, Wes, and Guy McCaskie. UNUSUAL BEHAVIOR OF A WHITE-TAILED TROPIC-BIRD IN CALIFORNIA. Condor 67(2): 186-187, 2 figs. Mar.-Apr. 1965. WR 118: 40
[Santa Ana, Calif.] A male white-tailed tropic-bird (Phaëthon lepturus) was attracted to flying gliders and attempted to copulate with a glider on the ground.

Hodson, N. L. SWALLOWS LIVING INSIDE ENGINEERING WORKS UNTIL LATE NOVEMBER. British Birds 58(3): 98. Mar. 1965. WR 118: 40
Some swallows (Hirundo rustica) remained until 25 Nov., spending much of their time in a heated building where they had freedom of entry and exit. Insect food was captured both inside and outside of the building.

Il'enko, A. I. [THE NESTING INTERRELATIONS OF BIRDS AT POPULATED POINTS AROUND MOSCOW.] Nauchn. Doklady Vysshei Shkoly. Biol. Nauki 2: 41-45. 1963. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1964, no. 5I197. Transl. of Russian abstr.] WR 118: 40

Il'enko, A. I., and R. D. Zhantiev. [FEEDING HABITS OF SPARROWS IN THE CENTRAL PART OF MOSCOW OBLAST.] Zool. Zhur. 42(11): 1736-1740, illus. 1963. [From Biol. Abstr. 45(16), 1964. In Russian with English summ.] WR 118: 40
[Moscow State Univ., Moscow, USSR.]

Inozemtsev, A. A. [CHOICE OF FOOD BY BIRDS, AND SOME REASONS FOR ITS VARIABILITY.] Ornitologia 6: 424-450. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 40

Inozemtsev, A. A. [THE FEEDING OF THE YOUNG OF PRUNELLA MODULARIS AND LOCUSTELLA FLUVIATILIS IN THE MOSCOW REGION.] Ornitologia 6: 101-104. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 40

Johnson, Richard E. REPRODUCTIVE ACTIVITIES OF ROSY FINCHES, WITH SPECIAL REFERENCE TO MONTANA. Auk 82(2): 190-205, 2 figs. Apr. 1965. WR 118: 40
[Mont. State Univ., Missoula.] With discussions on nest site, nest material, nest dates, clutch size, territory, rate of feeding, nest sanitation, food, fledged young, flocking, predators, and sex ratio of gray-crowned rosy finches (Leucosticte tephrocotis).

Karpovich, V. N. [ECOLOGY OF ABUNDANT INHABITANTS OF MAN-MADE NESTING SITES (STURNUS VULGARIS, MUSCICAPA HYPOLEUCA) IN THE OKSK RESERVATION AREA.] Trudy Oksk Gos. Zapovednika 4: 65-176. 1962. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur. Biol., 1963, no. 17I140. Transl. of Russian abstr.] WR 118: 40

King, James R., Donald S. Farner, and Martin L. Morton. THE LIPID RESERVES OF WHITE-CROWNED SPARROWS ON THE BREEDING GROUND IN CENTRAL ALASKA. Auk 82(2): 236-252, 4 figs. Apr. 1965. WR 118: 41
[Wash. State Univ., Pullman.] Lipid reserves of white-crowned sparrows (Zonotrichia leucophrys gambelii) were 3-4% of total body weight until shortly before autumn migration when they increased to an average of 8% and a maximum of 16%. Variation in total body weight is not a reliable index of variation of lipid reserves in summer and autumn.

Krushinskii, L. V., and others. [THE INTER-RELATIONSHIP OF EXTRAPOLATION REFLEXES AND CONDITIONED REFLEXES IN BIRDS.] Ornitologia 6: 408-417. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 41

Lamba, B. S. THE NIDIFICATION OF SOME COMMON INDIAN BIRDS. III. THE BLACK DRONGO (DICURUS MACROCERUS VIEILLOT). Res. Bull. Panjab Univ. Sci. 14 (1/2): 1-9. 1963. [From Biol. Abstr. 45(18), 1964.] WR 118: 41
[Zool. Surv., Calcutta, India.]

Lamba, B. S. THE NIDIFICATION OF SOME COMMON INDIAN BIRDS. IV. THE COMMON MYNA (ACRIDOTHERES TRISTIS LINN.). Res. Bull. Panjab Univ. Sci. 14 (1/2): 11-17, 1963. [From Biol. Abstr. 45(18), 1964.] WR 118: 41
[Zool. Surv., Calcutta, India.]

Lamba, B. S. THE NIDIFICATION OF SOME COMMON INDIAN BIRDS. V. THE INDIAN ROLLER OR BLUE JAY (CORACIAS BENGHALENSIS LINN.). Res. Bull. Panjab Univ. Sci. 14(1/2): 21-28. 1963. [From Biol. Abstr. 45(18), 1964.] WR 118: 41
[Zool. Surv., Calcutta, India.]

Lemon, Robert E. THE SONG REPERTOIRES OF CARDINALS (RICHMONDENA CARDINALIS) AT LONDON, ONTARIO. Canadian J. Zool. 43(3): 559-569, 6 figs. May 1965. WR 118: 41
[McGill Univ., Montreal, Quebec.] Abstract: Twenty-five cardinals (Richmondena cardinalis) living on the campus of the University of Western Ontario at London, Ontario, had a total repertoire of 14 types of sounds, or syllables, which they used in their songs. The birds sang the syllables in various combinations to form song types, but only 10 song types were commonly used by most birds. These 10 types each consisted of only one or two types of syllables. One bird sang its 10 types in varying amounts. The results were based on tape recordings followed by analysis on a sound spectrograph instrument, or sonagraph, and also based on periods of listening.

Lennerstedt, I. [SOME FEATURES OF THE BREEDING BIOLOGY OF THE WILLOW WARBLER, WHINCHAT, AND REED BUNTING IN CENTRAL LAPLAND.] Flora & Fauna 3: 94-123. 1964. [From Ibis 107(1), 1965. In Swedish with English summ.] WR 118: 41
"Phylloscopa trochilus, Saxicola rubetra, and Emberiza schoeniclus."

Lévêque, R. NOTES SUR LA REPRODUCTION DES OISEAUX AUX ÎLES GALAPAGOS. [NOTES ON THE REPRODUCTION OF BIRDS ON THE GALAPAGOS ISLANDS.] Alauda 32: 5-44, 81-96. 1964. [From Ibis 107(1), 1965. In French with English summ.] WR 118: 41

McCabe, Robert A. NEST CONSTRUCTION BY HOUSE WRENS. Condor 67(3): 229-234, 2 figs. May-June 1965. WR 118: 41
[Univ. Wis., Madison.] The average depth of 29 house wren (Troglodytes aedon) nests built in three-quart tin cans was 11.5 cm; the average height of 19 nests was 12.9 cm; the average weight of 52 nests was 121 gm. One plant species usually comprised about 67% of the weight of the nests. The bulky or stick part of the nests were made by the males. The nest linings were made by the females. Feathers were contained in the linings of all 52 nests.

Millar, John D. AN UPLAND REDHEAD NEST. Auk 82(2): 280, 1 fig. Apr. 1965. WR 118: 42
[Canadian Wildl. Serv., Saskatoon, Saskatchewan.] The nest was 17-18 in. above the existing water level and about 5 feet from the water's edge.

Molodovskii, A. V., and others. [UNUSUAL CONSTRUCTION OF THE NEST OF PHYLLOSOPUS SIBILATOR.] Ornitologia 6: 476. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 42

Moshkov, E. A., and L. M. Rudneva. [THE MECHANISM OF SEASONAL FORM DEVELOPMENT PROCESSES IN BIRDS.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 105-106. 1962. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 17I132. In Russian.] WR 118: 42

Payne, Robert B. THE MOLT OF BREEDING CASSIN AUKLETS. Condor 67(3): 220-228, 2 figs. May-June 1965. WR 118: 42
[Museum Vertebrate Zool., Berkeley, Calif.] Cassin auklets (Ptychoramphus aleutica) molt their primaries progressively and remain able to fly throughout the molting period. The postnuptial molt is started when the birds are still courting, incubating, or feeding young. The rate of the molt is slower in adults engaged in nesting activities than in those not yet starting to nest. Molt stops completely in some adults that are feeding young.

Penney, R. L. SOME PRACTICAL ASPECTS OF PENGUIN NAVIGATION-ORIENTATION STUDIES. BioScience 15(4): 268-270, 4 figs., 1 map. Apr. 1965. WR 118: 42
[Johns Hopkins Univ., Baltimore, Md.] Abstract: Adélie Penguins are useful subjects for studies of celestial navigation-orientation due to their unusual life history, adaptations, and circumpolar distribution. Modern logistic support by the National Science Foundation and the U. S. Navy in Antarctica allows rapid transport of experimental birds from their home rookeries to remote and barren release sites.

Pinowski, Jan. OVERCROWDING AS ONE OF THE CAUSES OF DISPERSAL OF YOUNG TREE SPARROWS. Bird Study 12(1): 27-33, 2 figs. Mar. 1965. WR 118: 42
[Inst. Ecology, Polish Acad. Sci., Warsaw, Poland.]

Prévost, J., and J. Sapin-Jaloustre. A PROPOS DES PREMIÈRES MESURES DE TOPOGRAPHIE THERMIQUE CHEZ LES SPHÉNISCIDÉS DE LA TERRE ADÉLIE. [A DISCUSSION OF THERMOREGULATION IN PENGUINS ON ADELIE LAND.] Oiseau 34, suppl.: 52-90. 1964. [From Ibis 107(1), 1965. In French with English summ.] WR 118: 42

Ramp, Warren K. THE AUDITORY RANGE OF A HAIRY WOODPECKER. Condor 67(2): 183-185, 1 fig. Mar.-Apr. 1965. WR 118: 42
[Colo. State Univ., Fort Collins.] Tests indicated that a hairy woodpecker (Dendrocopos villosus) heard sounds of frequencies ranging from 30 to 18,500 cycles per second.

Root, Richard Bruce. NICHE ORGANIZATION IN THE BLUE-GRAY GNATCATCHER (POLIOPTILA CAERULEA). Ph.D. thesis, Univ. Calif. (Berkeley). 146 p. 1964. [Abstr. in Dissertation Abstr. 25(10), 1965.] WR 118: 42

Schildmacher, H. PHOTOPERIODISCHER EFFEKT UND SPEKTRALES HELLIGKEITS-EMPFINDEN BEI EINIGEN VOGELARTE. [PHOTOPERIODIC EFFECT AND SPECTRUM BRIGHTNESS PERCEPTION OF SOME SPECIES OF BIRDS.] Biol. Zentralbl. 82(1): 31-44. 1963. [From Biol. Abstr. 45(17), 1964. In German.] WR 118: 42
For similar intensity ranges, gold was selected as the brightest rather than red, green or blue by Erithacus rubecula, Parus major and Parus caeruleus. Red or green is second. Blue is chosen only if other colors are suppressed to a tenth of the intensity. If motion serves as the criterion the results hold also for Carduelis chloris. Ordinarily birds suffer no weight loss in cages of their chosen color. Infra-red did not activate the gonads of C. chloris

although red light can. Red light is also effective for Fringilla coelebs, Passer domesticus, Carduelis spinus, Emberiza citrinella, and Erithacus rubecula. Blue light is effective for only 3 species; gold light and green light are effective for only 2 species. A hypothesis based on non-visual light reception is discussed.

Shubnikova, O. N., and Yu. V. Morozov. [SOME ORNITHOLOGICAL OBSERVATIONS IN CENTRAL YAKUTIA.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 64(5): 142-144. 1959. [From Biol. Abstr. 45(15), 1964, from Referat. Zhur., 1960, no. 100210. Transl. of Russian abstr.] WR 118: 43

From observations made in summer and fall of 1958 in the neighborhood of Yakutsk, data are given on the nesting (nesting biotopes, nests, clutches, and broods) of the four following birds: Siberian capercaillie (Tetrao urogalloides); the pintail snipe (Capella stenura); the red-breasted flycatcher (Muscicapa parva); the Chinese grey-spotted flycatcher (M. griseisticta). Data are given on another three birds met with including their stomach contents: the long-eared owl (Asio otus); Pallas's rose finch (Erythrina rosea); and the olive thrush (Turdus obscurus).

Turner, Cynthia Gale. ROOSTING BEHAVIOR OF THE BLUE JAY. Auk 82(2): 285. Apr. 1965. WR 118: 43

[12524 Two Farm Drive, Silver Spring, Md.] Between 13 and 22 Jan., 2-5 blue jays (Cyanocitta cristata) went daily to roost more than 4 hours before official local sunset and left the roost a few minutes before sunrise.

van de Peppel, J. WAARNEMINGEN BIJ EEN WIELEWAALENNEST. [OBSERVATIONS AT A NEST OF THE GOLDEN ORIOLE.] Levende Nat. 65(11): 237-239, illus. 1962. [From Biol. Abstr. 45(13), 1964. In Dutch.] WR 118: 43

van Orden, Chr., and A. Smit. SIJZENJAREN. [SISKIN YEARS.] Levende Nat. 65(6): 121-128, illus. 1962. [From Biol. Abstr. 45(13), 1964. In Dutch.] WR 118: 43

Siskins (Carduelis spinus) sometimes migrate in great numbers to the western European countries. Analysis of meteorological data revealed that arrivals of great numbers of siskins are not correlated with either prevailing wind directions or the number of hours of sunshine. Evidence could be adduced that especially lack of adequate food (alder seeds) leads to mass migration in western direction.

Verner, Jared. TIME BUDGET OF THE MALE LONG-BILLED MARSH WREN DURING THE BREEDING SEASON. Condor 67(2): 125-139, 4 figs. Mar.-Apr. 1965. WR 118: 43

[Univ. Calif., Berkeley.] Long-billed marsh wrens (Telmatodytes palustris) sang at dawn for a longer period following warm than colder nights. Most food-searching was done in early or midafternoon. There was a peak in singing activity 2-3 days before egg-laying. Adults ate small insects and carried larger ones to the nestlings. Males spent less time food-seeking in June than in May, reflecting a greater abundance of insects with advance of the season.--From summ.

Walrecht, B. J. J. R. RICHELBOUW BIJ ZWALUWEN. [RIDGES IN THE NEST-BUILDING IN SWALLOWS.] Levende Nat. 65(7/8): 169-173. 1962. [From Biol. Abstr. 45(13), 1964. In Dutch.] WR 118: 43

Weeden, J. Stenger. TERRITORIAL BEHAVIOR OF THE TREE SPARROW. Condor 67 (3): 193-209, 6 figs. May-June 1965. WR 118: 43

[Univ. Alaska, College.] Total activity spaces used by breeding male tree sparrows (Spizella arborea) ranged from 1.5 to 9.3 acres. Areas of total activity spaces varied inversely with population density. Total activity spaces had central cores of maximum use and outer areas of less use. There was overlapping of neighboring activity spaces, but overlapping was not related to population density. Activity spaces of females were smaller and were within the boundaries of those of males. Activity was more concentrated around the center of the activity space early than late in the day. In general, daily activity spaces were largest in size during courting.

West, George C. SHIVERING AND HEAT PRODUCTION IN WILD BIRDS. Physiol. Zoöl. 38(2): 111-120, 5 figs. Apr. 1965. WR 118: 44
[Univ. Alaska, College.] Shivering responses of evening grosbeak, redpoll, grackle and crow were studied. A linear correlation of shivering with oxygen consumption was found for all four species studied. The species correlations tend to be colinear when oxygen consumption is expressed on a surface-area basis. There is no indication that non-shivering thermogenesis occurs, and it is concluded that shivering and muscular activity are the principal means of extra heat production in birds.--From summ.

Wiens, John A. NEST PARASITISM OF THE DICKCISSEL BY THE YELLOW-BILLED CUCKOO IN MARSHALL COUNTY, OKLAHOMA. Southwestern Nat. 10(2): 142. 30 Apr. 1965. WR 118: 44
[Univ. Wis., Madison.]

Wildenthal, Joyce L. STRUCTURE IN PRIMARY SONG OF THE MOCKINGBIRD (MIMUS POLYGLOTTOS). Auk 82(2): 161-189, 11 figs. Apr. 1965. WR 118: 44
[5325 Hidalgo, Houston, Texas.] Chiefly considers syllable-patterns. "Approximately 80 per cent of phrases consist of renditions of the same syllable-pattern, approximately 3 per cent consist of renditions of syllable-patterns each of which is different, and approximately 17 per cent are made up of renditions of syllable-patterns any one of which may be rendered more than once."

Yocom, Charles F. LONGEVITY RECORD OF A BLACK-FOOTED ALBATROSS. Condor 67(2): 187-188. Mar.-Apr. 1965. WR 118: 44
[Humboldt State Coll., Arcata, Calif.] A banded black-footed albatross (Diomedea nigripes) was at least 18 years old when recovered.

Zimmerman, John L. DIGESTIVE EFFICIENCY AND PREMIGRATORY OBESITY OF THE DICKCISSEL. Auk 82(2): 278-279. Apr. 1965. WR 118: 44
[Kans. State Univ., Manhattan.] It appears that during the premigratory fattening period unknown physiological mechanisms operate to increase the efficiency of digestion or absorption of food in the gut and thus augment the energy available for storage.

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Barabash-Nikiforov, I. I., and L. L. Semago. [BIRDS FROM THE SOUTHEAST CHERNOZEM REGION.] Voronezh Univ. (Voronezh). 211 p., illus. Pr. 1 ruble, 20 kopecks. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 17I91K. Transl. of Russian abstr.] WR 118: 44

Cuello, Juan, and Eugenio Gerzenstein. LAS AVES DEL URUGUAY. LISTA SISTEMÁTICA, DISTRIBUCIÓN Y NOTAS. [THE BIRDS OF URUGUAY. SYSTEMATIC LIST, DISTRIBUTION AND NOTES.] Comun. Zool. Mus. Hist. Nat. Montevideo 6(93): 7-191, maps. 1962. [From Biol. Abstr. 45(14), 1964. In Spanish.] WR 118: 44
An annotated list of 370 spp. of 267 genera, and 68 families.

Gladkov, N. A. [BIRDS OF THE ARCTIC REGION OF YAKUTIA (TIKSI BAY).] Problemy Severa. Akad. Nauk SSSR (Moscow) 2: 169-193. 1958. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1960, no. 35310. Transl. of Russian abstr.] WR 118: 44

Johnson, Ned K. THE BREEDING AVIFAUNAS OF THE SHEEP AND SPRING RANGES IN SOUTHERN NEVADA. Condor 67(2): 93-124, 5 figs. Mar.-Apr. 1965. WR 118: 44
[Museum Vertebrate Zool., Berkeley, Calif.] Observations on ecology and abundance of 69 spp. in the Spring Range and 62 spp. in the Sheep Range are reported.

Kurochkin, E. N. [DISTRIBUTION OF SOME SEA BIRDS IN THE NORTH PACIFIC OCEAN.] Zool. Zhur. 42(8): 1233-1231. 1963. [From Biol. Abstr. 45(16), 1964. In Russian with English summ.] WR 118: 45
[Moscow State Univ., Moscow, USSR.]

Kuroda, Nagahisa. A SURVEY OF SEA BIRDS OF TEURI ISLAND, HOKKAIDO, WITH NOTES ON LAND BIRDS. Misc. Repts. Yamashina's Inst. Ornithol. & Zool. 3(5): 363-383. 1963. [From Biol. Abstr. 45(17), 1964.] WR 118: 45
[Yamashina Museum Birds, Shibuya, Tokyo, Japan.]

Miller, Alden H. SEASONAL ACTIVITY AND ECOLOGY OF THE AVIFAUNA OF AN AMERICAN EQUATORIAL CLOUD FOREST. Univ. Calif. Publ. Zool. 66(1): 1-78, illus. 1963. [From Biol. Abstr. 45(13), 1964.] WR 118: 45
[Mus. Vertebrate Zool., Univ. Calif. Berkeley.]

Murray, J. J., Sr. AN ANALYSIS OF THE VIRGINIA AVIFAUNA. Va. J. Sci. 15 (2): 71-75. 1964. [From Biol. Abstr. 45(17), 1964.] WR 118: 45
[6 Jordan St., Lexington, Va.] Virginia has an avifauna of 440 well-authenticated forms, 364 spp. and 76 additional sspp.

Nakamura, Toru. A SURVEY OF AN UPLAND GRASSLAND BIRD COMMUNITY DURING BREEDING SEASON. Misc. Repts. Yamashina's Inst. Ornithol. & Zool. 3(5): 334-357. 1963. [From Biol. Abstr. 45(17), 1964.] WR 118: 45
[Fac. Med. Shinshu Univ., Matsumoto, Japan.]

Ostapenko, M. M. [SPECIES COMPOSITION AND DISTRIBUTION OF WINTERING BIRDS IN THE SURKHAN RIVER BASIN.] Voprosy Biol. & Kraevoi Med. Akad. Nauk Uzbeksk. SSR (Tashkent) 4: 310-314. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1964, no. 7I167. Transl. of Russian abstr.] WR 118: 45

Pavlov, Z. I. [A STUDY OF THE SPECIES COMPOSITION OF THE BIRD FAUNA OF THE CRIMEAN YAILAS.] In: (Collection of postgraduate papers.) L'vov Univ. (L'vov). p. 81-86. 1963. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 23I134. Transl. of Russian abstr.] WR 118: 45

Reimers, N. F. [THE BIOLOGY, PHENOLOGY, AND MOVEMENT OF FOREST BIRDS IN THE VICINITY OF THE VILLAGE OF ZHIGALOVO ON THE TUTURA RIVER, A TRIBUTARY OF THE UPPER LENA RIVER.] Byul. Vost.-Sibirsk. Fenologicheskoi Komis. 2/3: 29-41. 1963. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 24I149. Transl. of Russian abstr.] WR 118: 45

Richardson, Frank, and John Bowles. A SURVEY OF THE BIRDS OF KAUAI, HAWAII. Bull. Bernice P. Bishop Museum 227: 1-51, illus., map. 1964. [From Biol. Abstr. 45(15), 1964.] WR 118: 45
[Univ. Wash., Seattle.] Outlines the bird habitats on Kauai, with descriptions and illustrations. An annotated list is given of the birds of that island, including 22 permanent residents, 10 sea birds, 4 waterfowl, 3 shore birds, and 25 established foreign species, with an analysis of their distribution on the island.

Shkatulova, A. P. [A NOTE ON THE CHARACTERISTICS OF THE BIRD FAUNA OF SOME PHYSICAL-GEOGRAPHIC REGIONS OF CHITINSK OBLAST.] Uch. Zap. Chitinsk. Gos. Ped. Inst. 8: 102-119. 1963. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 20I194. Transl. of Russian abstr.] WR 118: 45

Strawiński, Stefan. PTAKI MIASTA TORUNIA. [THE BIRDS OF THE TOWN OF TORUŃ.] Acta Ornithol. (Warsaw) 7(5): 115-156, map. 1963. [From Biol. Abstr. 45(15), 1964. In Polish with Russian and English summ.] WR 118: 45

Strawiński, Stefan. PTAKI PODMIEJSKICH ZADRZEWIEŃ TORUNIA. [BIRDS IN WOODS SITUATED NEAR RIVERS AND IN THE PARK OF TORUŃ.] Stud. Soc. Sci. Torunensis Sec. E Zool. 7(5): 101-123. 1963. [From Biol. Abstr. 45(16), 1964. In Polish with English summ.] WR 118: 46
[Dept. Gen. Zool., Univ. Toruń, Toruń, Poland.]

Strokov, V. V. [BIRDS OF TERRESTRIAL HABITATS IN THE SOCHI-MATSESTIN HEALTH RESORT REGION.] Okhrana Prirody & Ozelenenie 4: 121-133. 1960. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 4I142. Transl. of Russian abstr.] WR 118: 46

Swales, M. K. THE SEA-BIRDS OF GOUGH ISLAND. [I.] Ibis 107(1): 17-42, 2 figs. Jan. 1965. WR 118: 46

Swales, M. K. THE SEA BIRDS OF GOUGH ISLAND. [II.] Ibis 107(2): 215-229. Apr. 1965. WR 118: 46
[Denstone Coll., Uttoxeter, England.] A checklist of 30 spp. of sea-birds has been compiled, and the relative status of each species was estimated. General observations were made on the nesting seasons, breeding behavior and molt of the species treated.--From summ.

Zelenka, G. NOTES ORNITHOLOGIQUES SUR LA GRÈCE DU NORD (AOÛT 1962). [ORNITHOLOGICAL NOTES ON NORTHERN GREECE (AUGUST 1962).] Nos Oiseaux 27: 189-203. 1964. [From Ibis 107(2), 1965. In French.] WR 118: 46
Valuable notes on Thracian and Macedonian birds, especially aquatic species. Emphasis is laid on the rapid habitat destructions occurring through draining for cultivation.

BIRDS--POPULATIONS & FLUCTUATIONS

Bruce, James A. OHIO CHRISTMAS BIRD COUNTS. Ohio Conserv. Bull. 29(3): 18-19, 31, illus. Mar. 1965. WR 118: 46
[565 Spring St., Wooster, Ohio.] Totals from Ohio Christmas bird counts made during 1954-64 were used to indicate population trends of various species.

Drozdov, N. N. [COMPARISON OF THE SUMMER AND AUTUMN POPULATIONS OF BIRDS IN THE CULTIVATED AREAS OF ZUVAND.] Ornitologia 6: 341-344. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 46

Enemar, A. THE DENSITY OF BIRDS IN THE SUBALPINE BIRCH FOREST OF THE ABISKO AREA, SWEDISH LAPLAND, IN 1961. Act. Univ. Lund N.F. 2: 58 Nr. 12. 1963. [From Ibis 107(1), 1965.] WR 118: 46
Quantitative studies, using the method of Enemar (1959), of the avifauna of the five habitat subdivisions proposed by Southern & Venables (J. Animal Ecol. 1939: 114-119), and notes on changes in the species present.

Filonov, K. P. [VARIATIONS IN THE POPULATION SIZE OF WINTER BIRDS.] Trudy Barguzinsk Gos. Zapovednika 4: 191-202. 1962. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 21I22. Transl. of Russian abstr.] WR 118: 46

Józefik, Mieczysław. WPŁYW NIEKTÓRYCH CZYNNIKÓW ŚRODOWISKOWYCH NA WIELKOŚĆ I ROZMIESZCZENIE KOLONII BRZEGÓWEK, RIPARIA RIPARIA (L.), NA SANIE. [THE INFLUENCE OF SOME ENVIRONMENTAL FACTORS ON THE NUMBER AND DISTRIBUTION OF COLONIES OF THE SAND MARTIN, RIPARIA RIPARIA (L.), ON THE RIVER SAN.] Acta Ornithol. (Warsaw) 7(3): 69-87, illus. 1962. [From Biol. Abstr. 45(15), 1964. In Polish with Russian and English summ.] WR 118: 46

Kuroda, Nagahisa. A WINTER SEA-BIRD CENSUS BETWEEN TOKYO AND KUSHIRO, HOKKAIDO. Misc. Repts. Yamashina's Inst. Ornithol. & Zool. 3(4): 227-238. 1963. [From Biol. Abstr. 45(13), 1964.] WR 118: 46
[Yamashina Mus. Birds, Shibuya, Tokyo, Japan.]

Ribaut, Jean-Pierre. DYNAMIQUE D'UNE POPULATION DE MERLES NOIRS, TURDUS MERULA L. [THE DYNAMICS OF A POPULATION OF BLACKBIRDS.] Rev. Suisse de Zool. 71(42): 815-902, 28 figs. Dec. 1964. In French with English summ. WR 118: 47
[Musée Zool., Lausanne, Switzerland.] A high density of nesting pairs was found under conditions of highly favorable habitat and abundant food. The intensive territorial activity of the birds probably disturbed the nesting of the various nesting pairs. Consequently, the reproduction rate was abnormally low.--From concl.

Rogers, Alan E. F. THE CHANGING STATUS OF THE FULMAR IN NORTHERN IRELAND. Bird Study 12(1): 34-45. Mar. 1965. WR 118: 47
[54 Bryngwyn Road, Newport, Monmouthshire, England.] Since a survey made about 20 years earlier, the numbers of fulmars present in Northern Ireland during the breeding season has trebled. This increase has been chiefly at the well-established colonies.--From summ.

Rowan, M. K. REGULATION OF SEA-BIRD NUMBERS. Ibis 107(1): 54-59. Jan. 1965. WR 118: 47
[Percy FitzPatrick Inst. African Ornithol., Rondebosch, Cape Province, South Africa.]

Shevareva, T. P., and Ya. V. Sapetin. [POPULATION COMPOSITION OF RIPARIA RIPARIA ON THE OKA RIVER, BASED ON RINGING DATA.] Trudy Oksk. Gos. Zapovednika 4: 337-348. 1962. [From Biol. Abstr. 45(14), 1964, from Referat. Zhur., Biol., 1963, no. 12I197. Transl. of Russian abstr.] WR 118: 47

Snow, David W. THE BREEDING OF THE RED-BILLED TROPIC BIRD IN THE GALAPAGOS ISLANDS. Condor 67(3): 210-214. May-June 1965. WR 118: 47
[British Trust for Ornithol., Beech Grove, Tring, Hertfordshire, England.] Comparison was made of two breeding populations of red-billed tropic birds (Phaëthon aethereus). Birds of the denser population nested in all months of the year; birds of the sparser population had a distinct breeding season with its peak in Oct. and Nov.

BIRDS--ECONOMICS, CONTROL, MORTALITY

Anderson, Ted R. FROG CAPTURES A FLEDGLING EASTERN PHOEBE. Auk 82(2): 285-286. Apr. 1965. WR 118: 47
[7803 Summit, Kansas City, Mo.] A bullfrog (Rana catesbeiana) captured a nestling phoebe (Sayornis phoebe) that was flying over the water. Other references to the predation by frogs upon small birds are included.

Buckner, C. H., and W. J. Turnock. AVIAN PREDATION ON THE LARCH SAWFLY, PRISTIPHORA ERICHSONII (HTG.), (HYMENOPTERA: TENTHREDINIDAE). Ecology 46(3): 223-236, 4 figs. Spring 1965. WR 118: 47
[Forest Entomol. Lab., Box 6300, Winnipeg, Manitoba, Canada.] Forty-three of 54 spp. of birds collected in or near tamarack bogs were predators of the larch sawfly. Sparrows outranked warblers in sawfly predation. Many birds had preference for adult sawflies as compared with larvae. "Birds are likely to influence sawfly population trends at low insect densities, and perhaps at higher densities as well."

Donika, I. S., and others. [SCARING AWAY THE BIRD PESTS IN THE ORCHARDS, GARDENS AND VINEYARDS OF MOLDAVIA.] Ornitologia 6: 337-340. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 47

Dubrovskii, A. [BIRDS PERISH IN PETROLEUM.] Okhota & Okhotnich'e Khoz. 4: 58. 1959. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1960, no. 9192. Transl. of Russian abstr.] WR 118: 47
Migratory ducks and geese are frequently lost over the open petroleum reservoir, which has a surface of more than 500 m^2 (Ukhta, Komi ASSR); the reservoir has been in use for about 5 years.

Géroudet, P. L'HIVER RIGOUREUX DE 1962-63 EN SUISSE ROMANDE. [THE SEVERE WINTER OF 1962-63 IN WESTERN SWITZERLAND.] Nos Oiseaux 27: 209-226. 1964. [From Ibis 107(2), 1965. In French.] WR 118: 48

Almost all the barn owls, little owls, kingfishers and rails disappeared.

Golovanova, E. N. [BIOLOGICAL PRINCIPLES AND RESULTS OF USING BAIT AGAINST SPARROWS.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 1: 99-101. 1962. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 13I202. Transl. of Russian abstr.] WR 118: 48

Observations in Kazakhstan (1958-1959) and Tadzhikistan (1960-1961) have shown that bait made from millet and wheat with barium fluoroacetate, especially fluoroacetamide, is best suited for sparrows. The most effective trapping period is at the beginning of nesting.

Granett, Philip. NEED RESEARCH ON CONTROL OF CROP DAMAGE BY BIRDS. N. J. Agr. 45(3): 4-8, illus. 1963. [From Biol. Abstr. 45(16), 1964.] WR 118: 48

[Rutgers Univ., New Brunswick, N. J.]

Klitin, A. N. [THE ECONOMIC IMPORTANCE OF THE BIRDS OF SOVIET BUKOVINA.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 30. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I181. In Russian.] WR 118: 48

Lahrman, Fred W. REGINA AND LUMSDEN TV TOWER BIRD MORTALITIES, 1964. Blue Jay 23(1): 18-19. Mar. 1965. WR 118: 48

[Saskatchewan Museum Nat. Hist., Regina, Canada.] Lists are given of nearly 500 birds found dead at the bases of three television towers on two mornings.

BIRDS--PARASITES AND DISEASES

Hardy, John William. A SPECTACULAR CASE OF CNEMIDOCOPTIASIS (SCALY-LEG) IN THE WHITE-BREASTED NUTHATCH. Condor 67(3): 264-265, 1 fig. May-June 1965. WR 118: 48

[Occidental Coll., Los Angeles, Calif.] A specimen of white-breasted nuthatch (Sitta carolinensis umbrosa) collected in Mexico during 1936 contained a severe infection by the scaly leg mite (Cnemidocoptes mutans).

Van Den Broek, E., and J. Jansen, Jr. PARASITES OF ANIMALS IN THE NETHERLANDS. SUPPL. 1: PARASITES OF WILD BIRDS. Ardea 52: 111-116. 1964. [From Ibis 107(1), 1965.] WR 118: 48

A supplementary survey to that in Tijdschr. Diergeneesk. 84: 892-900.

GAME BIRDS--GENERAL

Abdyldabekov, K. A. [WAYS TO THE EFFICIENT USE OF GALLINACEOUS BIRDS OF KIRGIZIYA.] In: (Notes on the Eleventh Scientific Conference of the Professional and Teaching Staff of the Department of Biology of Kirgiz University.) (Frunze). p. 100-102. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I171. In Russian.] WR 118: 48

Ash, J. S., editor. [THE GAME RESEARCH ASSOCIATION / ANNUAL REPORT FOR 1964.] Game Res. Assoc. 81 p. [1965]. WR 118: 48

Contents: Further trials on the effects of a gamma BHC seed-dressing on breeding pheasants, J. S. Ash and A. Taylor; The gapes inquiry, G. I. Sharpe; Moniliasis in partridges, M. B. Jones; National game census, A. D. Middleton; The pesticide / game-bird survey, 1964, J. S. Ash; Pheasant research, R. P. Bray; Damage to sugar beet by game, A. D. Middleton; Survey of game-bird

diseases, M. B. Jones; Pheasant and partridge wing-tagging results in the 1963/64 season, J. S. Ash and R. P. Bray; The farm environment for game, P. Huband and A. D. Middleton; Incubating pheasant eggs, T. H. Blank; Red grouse and heather, D. Jenkins; Pesticide picture 1964, J. S. Ash; Improved partridge chick survival with aureomycin, L. H. W. B. Barrington; Farm pest control, A. D. Middleton; Grit, A. D. Middleton; Partridges in Austria, J. S. Ash; Coccidiosis and coccidiostats, M. B. Jones; Aberrant partridges, J. S. Ash; Wildlife services in Canada and the United States, T. M. Nicholl.

QUAIL

Mukherjee, Ajit Kumar. AN ANALYSIS OF THE FOOD OF THE GREY QUAIL COTURNIX COTURNIX (LINNAEUS) IN WESTERN RAJASTHAN (INDIA). Pavo Indian J. Ornithol. 1(1): 32-34. 1963. [From Biol. Abstr. 45(13), 1964.] WR 118: 49
[Zool. Surv. India, Calcutta, India.]

Robel, Robert J. DIFFERENTIAL WINTER MORTALITY OF BOBWHITES IN KANSAS. J. Wildl. Mgmt. 29(2): 261-266, 1 fig. Apr. 1965. WR 118: 49
[Kans. State Univ., Manhattan.] Abstract: During a 1961-64 study of bobwhites (Colinus virginianus) in northeastern Kansas, 261 were collected in an effort to obtain information on food habits, incidence of internal parasites, and population dynamics. This paper presents some of the information on population dynamics. The data were stratified into two periods, autumn and winter. The proportion of adults in the population increased as the quail entered the severe winter months. This change in age ratio served as a basis for determining differential mortality between juveniles and adults. Survival rate of juveniles during the September-through-April period was calculated to be 0.271 of the survival rate of adults for the same period. In contrast to most other studies, unbalanced sex ratios favored the females during this study. Females accounted for 53.26 percent of the quail collected, being slightly more numerous in samples during the autumn period. No differential mortality was detected between males and females.

PHEASANTS

Airumyan, K. A. [THE ACCLIMATIZATION AND REPRODUCTION OF PHEASANTS IN THE CAUCASUS.] In: (The acclimatization and reproduction of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 44-46. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I164. In Russian.] WR 118: 49

Breitenbach, Robert P., Clarence L. Nagra, and Roland K. Meyer. STUDIES OF INCUBATION AND BROODY BEHAVIOUR IN THE PHEASANT (PHASIANUS COLCHICUS). Animal Behaviour 13(1): 143-148, 1 fig. Jan. 1965. WR 118: 49
[Univ. Mo., Columbia.] Summary: Evidence is presented which indicates that hen pheasants show responses other than incubation as incubation progresses. Some types of behaviour are observed only by hens in the advanced stages of incubation. Other responses may be detected throughout incubation. The development of this behaviour in the first half of incubation coincides with the rapid rise in the content of prolactin in the pituitary. Experimental reduction and prolongation of the incubation period yield data which suggest that prolactin has a conditioning effect on the brooding hen. Prior to this conditioning, a premature hatching stimulus does not elicit brooding behaviour in hens with no previous breeding experience. Delay of the hatching stimulus does not appear to affect chick acceptance. The typical behaviour of the pheasant cock to the incubating hen and the chicks is described. The few cocks which incubated eggs showed the same development of behaviour and broody activity which was observed in hens.

PHEASANTS--Continued

Kolesnikov, A. D., and V. P. Derets. [ACCLIMATIZING PHEASANTS IN THE FORESTS ALONG THE SAMARA RIVER IN THE DNEPROPETROVSK AREA.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 105-107. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I161. In Russian.] WR 118: 50

Nagra, Clarence L., and Roland K. Meyer. EFFECT OF CONSTANT LIGHT AND TEMPERATURE ON THE SEASONAL CYCLE IN BODY WEIGHT AND MALE PHEASANTS. Physiol. Zool. 37(1): 77-82, illus. 1964. [From Biol. Abstr. 45(15), 1964.] WR 118: 50
[Univ. Wis., Madison.]

Nazarenko, L. F., and others. [ACCLIMATISATION OF PHEASANTS ON THE NORTHWEST COASTAL REGION OF THE BLACK SEA.] Ornitologia 6: 477-478. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 50

Romanov, V. S., and T. N. Kurskova. [EXPERIENCE IN RAISING PHEASANTS IN THE BELOVEZHSKAYA FOREST PRESERVE.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 143-145. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I162. In Russian.] WR 118: 50

GROUSE, PARTRIDGE, ETC.

Frisch, O. ZUR BIOLOGIE DES ROTHUHNS (ALECTORIS RUFA). [ON THE BIOLOGY OF RED-LEGGED PARTRIDGE (ALECTORIS RUFA).] Vogelwelt 83: 145-149. 1962. [From Ibis 107(2), 1965. In German.] WR 118: 50

Gabuzov, O. [THE CARE OF PARTRIDGES THROUGHOUT THE WINTER.] Okhota & Okhotnich'e Khoz. 1: 27-28. 1959. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1960, no. 6611. Transl. of Russian abstr.] WR 118: 50

Ivanter, E. V. [LYRURUS TETRIX TETRIX IN SOVIET KARELIA.] Ornitologia 6: 68-80. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 50

Koivisto, Ilkka, and Yrjö Paasikunnas. KOKEMUKSIA METSÄKANALINTUJEN POIKASTEN KEINOLLISESTA KASVATUKSESTA. [ARTIFICIAL REARING OF TETRAONID CHICKS.] Suomen Riista 17: 173-179, 2 figs. 1964. In Finnish with English summ. WR 118: 50
Summary: The authors report the results of experiments aimed at devising rearing methods as simple as possible. A new commercial fodder for pheasant chicks was found suitable for tetraonid chicks, too. It appeared important to start rearing indoors in rooms with a temperature of about 20°C, where the chicks spend their first weeks of life. Later the young birds may be moved to outdoor pens with a bottom of wire netting. When on a ground bottom the chicks are liable to catch diseases, especially coccidiosis.

Koivisto, Ilkka, and Matti K. Pirkola. TEEREN JA METSON SOIDINKÄYTTÄYTYMISESTÄ JA SOITIMEN MERKITYKSESTÄ. [ON THE BEHAVIOUR ON THE DISPLAY GROUND AND THE IMPORTANCE OF THE SOCIAL DISPLAY OF BLACK GROUSE (LYRURUS TETRIX) AND CAPERCAILLIE (TETRAO UROGALLUS).] Suomen Riista 17: 43-52, 4 figs. 1964. In Finnish with English summ. WR 118: 50
A hierarchy exists among the male birds, typically three ranks of males are involved. In the center of the display ground only the strongest, first-rank cocks may form and protect their display territories with boundaries more or less strictly defined. Surrounding these are the territories of the second-rank cocks. In the periphery of the ground are the weakest cocks of the third rank which are usually unable to establish any territories. Observations on individually known male black grouse have revealed that the rank of each individual is related to its age. Cocks of the third rank are young birds born the preceding year, cocks of the second rank are one year older than them, and the master cocks at least one year older still, i.e., three years old or more. It is very likely that the hierarchic ranking of the capercaillie cocks is also based on the respective ages of the individuals.--From summ.

Kruijt, J. P. KORHOENDERS. [BLACK GROUSES (MATING BEHAVIOR).] Levende Nat. 65(7/8): 145-156. 1962; 65(9): 181-195, illus. 1962. [From Biol. Abstr. 45(17), 1964. In Dutch.] WR 118: 51
[Groningen Univ., Groningen, Netherlands.]

Kuznetsov, V. I., and E. I. Korenberg. [THE BIOLOGY OF LYRURUS TETRIX, TETRASTES BONASIA AND TETRAO UROGALLUS IN THE SOUTH OF THE KIROV REGION.] Ornitologia 6: 117-125. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 51

Lacher, John R., and Dorothy D. Lacher. BLUE GROUSE IN CAPTIVITY. J. Wildl. Mgmt. 29(2): 404-405. Apr. 1965. WR 118: 51
[Univ. Colo., Boulder.] Abstract: We have kept blue grouse (Dendragapus obscurus) in captivity for 5 years and have developed an experimental feed for them consisting of sugar, gelatine, glycerol, bird mash, vitamins, and minerals. Two of four hens laid no eggs. Of the two laying hens, the better fertility record was achieved by the one whose diet contained natural sources of Vitamin A.

Mercer, Eugene, and Raymond McGrath. A STUDY OF A HIGH PTARMIGAN POPULATION ON BRUNETTE ISLAND, NEWFOUNDLAND IN 1962. Newfoundland Wildl. Div. Dept. Mines & Resources. [ii] + 15 p. with 34 tables and 7 figs. on unnumbered pages. May 1963. WR 118: 51
Willow ptarmigan (Lagopus lagopus) appeared on Brunette Island in the early 1930's from the mainland. Spring population estimates for 1962 were 207 birds per square mile (King strip census) and 147 birds per square mile (Lincoln Index). Hunting loss accounted for 38% of the fall population. Winter mortality was estimated at 77-92 birds per square mile. Some information is given on habitat and breeding biology.--From summ.

Rodionov, M. A. [THE ECOLOGY OF TETRAONIDS OF THE NORTHWESTERN PART OF THE EUROPEAN PART OF THE USSR AS RELATED TO THE SEASONAL LIFE OF THE FOREST.] Geog. Sbornik 16: 179-185. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 22I186. Transl. of Russian abstr.] WR 118: 51
The annual cycle of the hazel grouse, willow grouse, capercaillie, and black grouse in Leningrad Oblast, are considered in relation to the phenological seasons established by the stages of development of the trees. Each species undergoes seasonal changes in its locality and diet which are characteristic for the particular locality.

Sergeeva, N. A., and E. V. Sumina. [ATTEMPTS AT ACCLIMATIZING PERDIX DAURICA AND REACCLIMATIZING LAGOPUS LAGOPUS IN THE CENTRAL ZONE.] Ornitologia 6: 86-95. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 51

Sumina, E. B. [SOME RESULTS OF ACCLIMATIZATION OF THE CHINESE PARTRIDGE AND OF THE REACCLIMATIZATION OF THE WILLOW GROUSE AS SHOWN BY BANDING.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 175-177. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I169. In Russian.] WR 118: 51

Westerskov, Kaj. PELTOPYYN ELINMAHDOLLISUUKSISTA SUOMESSA. [FINLAND AS AN ENVIRONMENT FOR THE PARTRIDGE (PERDIX PERDIX).] Suomen Riista 17: 14-21, 4 figs. 1964. In Finnish with English summ. WR 118: 51
The Finnish partridge population fluctuates markedly from year to year. Finland is a marginal partridge range and, locally, populations decrease or die out completely during severe winters. Periods of favorable breeding seasons and mild winters result in peak populations; the last peak of high partridge numbers was experienced in the first half of the thirties. In northern Finland partridges are at the absolute limit of their adaptability and tolerance.--From summ.

Zwickel, Fred C., and Art N. Lance. RENESTING IN BLUE GROUSE. J. Wildl. Mgmt. 29(2): 402-404. Apr. 1965. WR 118: 52
[Univ. British Columbia, Vancouver, Canada.] Abstract: Two instances of renesting by individually marked blue grouse (Dendragapus obscurus fuliginosus) were observed on Vancouver Island, British Columbia. One of these demonstrated that renesting can occur in this species even though a first clutch is destroyed in the late stages of incubation.

TURKEY

Powell, James A. THE FLORIDA WILD TURKEY. [PART 1.] Florida Wildl. 18 (12): 18-27, 3 figs. + photos. May 1965. WR 118: 52
With sections on the topography, climatic factors, vegetation and food cover, and population of turkeys. Fall and winter food items found in wild turkey crops are tabulated. In twelve other tables weights of turkeys and sex and age ratios are summarized.

Powell, James A. THE FLORIDA WILD TURKEY. PART 2. Florida Wildl. 19(1): 18-26. June 1965. WR 118: 52
Protection; history; relationships between turkeys and other animals, agriculture forest practices and other land uses; harvest and other mortality; and hunting and regulations are dealt with in this part. A technical report complete with more reference tables and charts plus literature references is scheduled to be available in July 1965.

Smith, C. F. TURKEY TRACKS. Wis. Conserv. Bull. 30(2): 3-6, illus. Mar.-Apr. 1965. WR 118: 52
[Meadow Valley Wildl. Area, Wis.] Presented in diary form (covering the period 1954-64). Field observations are reported on the wild turkeys stocked in the Meadow Valley Wildlife Area by the Wis. Conserv. Dept.

DOVES AND PIGEONS

Doude Van Troostwijk, W. J. SOME ASPECTS OF THE WOODPIGEON POPULATION IN THE NETHERLANDS. Ardea 52: 13-29. 1964. [From Ibis 107(1), 1965.] WR 118: 52

Gasow, H. ÜBER BUCHECKERN ALS NAHRUNG DER RINGELTAUBE (COLUMBA PALUMBUS). [BEECHNUTS AS A DIET FOR THE TURTLE DOVE (COLUMBA PALUMBUS).] Ann. Epiphyties (Paris) 13 (Hors Ser.): 225-234, illus. 1962. [From Biol. Abstr. 45(13), 1964. In German and French.] WR 118: 52
[Landw., N.-Westfalschen Vogel-Schut., Essen-Bredeney, W. Germany.] A review.

Hudson, Robert. THE SPREAD OF THE COLLARED DOVE IN BRITAIN AND IRELAND. British Birds 58(4): 105-139, 9 figs. Apr. 1965. WR 118: 52
"Just ten years after the first arrivals nested in Norfolk...[Streptopelia decaocto] were known to be resident in 501 localities in Britain and Ireland.... The total population was estimated to be at least 18,855."

Irby, Harold Dewey. THE RELATIONSHIP OF CALLING BEHAVIOR TO MOURNING DOVE POPULATIONS AND PRODUCTION IN SOUTHERN ARIZONA. Ph.D. thesis, Univ. Ariz. 116 p. 1964. [From abstr. in Dissertation Abstr. 25(10), 1965.] WR 118: 52
[Patuxent Wildl. Res. Center, Laurel, Md.] Observations of individual male doves showed that the primary factor affecting the rate of perch-cooing was whether or not they were mated. Unmated males called much more frequently and for longer morning periods than did mated males. The rate of cooing of mated males was affected by their position in the nesting cycle. They called only infrequently while searching for a nest-site and while building nests. Calling increased during the laying and incubation phases and then decreased while the

males were brooding the nestlings. Mated males called most during the periods between nesting attempts. Male doves, whether unmated or mated, cooed at highest rates during the interval 30-15 minutes prior to sunrise. Thereafter cooing decreased, unmated males gradually and mated males sharply. Dove production could not be predicted on the basis of cooing records, for cooing variability was too great to relate cooing to production. Other aspects of breeding behavior studied included territoriality, pair-bond formation and duration, flapping-gliding flights, and other dove calls.

Lebeurier, Ed. RÉGIME DU PIGEON RAMIER COLUMBA PALUMBUS DANS LES ARRONDISSEMENTS DE MORLAIX ET DE CHATEAULIN (FINISTÈRE). [FOOD HABITS OF COLUMBA PALUMBUS IN THE DISTRICTS OF MORLAIX AND CHATEAULIN (FINISTÈRE).] Oiseau 33: 212-234. 1963. [From Ibis 107(1), 1965. In French.] WR 118: 53

Murton, R. K., and A. J. Isaacson. PRODUCTIVITY AND EGG PREDATION IN THE WOODPIGEON. Ardea 52: 30-47. 1964. [From Ibis 107(1), 1965.] WR 118: 53

Murton, R. K., N. J. Westwood, and A. J. Isaacson. RUSSIAN OBSERVATIONS BY G. N. LIKHACHEV ON THE DIET OF THE STOCK DOVE COLUMBA OENAS AND TURTLE DOVE STREPTOPELIA TURTUR. Ibis 107(2): 254-256. Apr. 1965. WR 118: 53
[Ministry Agr., Fisheries & Food, Tangley Place, Worplesdon, Surrey, England.]

Naether, Carl. A CLOSE-UP VIEW OF THE MOUNTAIN WITCH DOVE [GEOTRYGON VERSICOLOR, ECOLOGY, BEHAVIOR, CHARACTERISTICS, CAPTIVITY]. Avicult. Mag. 69 (5): 201-205. 1963. [From Biol. Abstr. 45(17), 1964.] WR 118: 53

WATERFOWL

Ardamatskaya, T. B. [MERGUS SERRATOR IN THE NORTHWEST OF THE BLACK SEA COASTAL AREA.] Ornitologia 6: 293-302. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 53

Atkinson-Willes, G. L. THE ROLE OF RESERVOIRS IN WILDFOWL CONSERVATION IN GREAT BRITAIN. IUCN Publ., New Ser. no. 3. p. 400-406. Dec. 1964. In English with French summ. WR 118: 53
[Wildfowl Trust, Slimbridge, Gloucestershire, England.]

Bowes, A. L. AN ECOLOGICAL INVESTIGATION OF THE GIANT PIED-BILLED GREBE PODILYMBUS GIGAS GRISCOM. Bull. B.O.C. 85: 14-19. 1965. [From Ibis 107(2), 1965.] WR 118: 53

Boyd, H. ARTIFICIAL RESTORATION OF WILDFOWL POPULATIONS. IUCN Publ., New Ser. no. 3. p. 350-356. Dec. 1964. In English with French summ. WR 118: 53
[Wildfowl Trust, Slimbridge, Gloucestershire, England.]

Clancey, P. A. YELLOWBILL DUCK (ANAS UNDULATA UNDULATA) FEEDING ON ACORNS. Ostrich 34(3): 165. 1963. [From Biol. Abstr. 45(17), 1964.] WR 118: 53
[Durban Museum, Durban, Union S. Africa.]

Ellis, John W., and John R. Frye. UTILIZATION OF SUGAR BEETS BY CANADA GEESE. J. Wildl. Mgmt. 29(2): 396-397. Apr. 1965. WR 118: 53
[Shiawassee Natl. Wildl. Refuge, Saginaw, Mich.] Abstract: In the fall of 1963, browsing Canada geese (Branta canadensis) on the Shiawassee Refuge in Michigan were observed for the first time feeding almost exclusively on sugar beet roots and crowns, apparently because the corn harvest was delayed and local goose browse had been made unpalatable by drought.

Funk, Howard D., and Jack R. Grieb. BAITED CANNON-NET SAMPLING AS AN INDICATOR OF CANADA GOOSE POPULATION CHARACTERISTICS. J. Wildl. Mgmt. 29(2): 253-260, 2 figs. Apr. 1965. WR 118: 54

[Colo. Dept. Game, Fish & Parks, Fort Collins.] Abstract: The reliability of sex and age ratios for Canada geese (Branta canadensis) caught in baited cannon-net traps and the percentage of geese carrying embedded shot were investigated on wintering areas in southeastern Colorado during the winters of 1961-62 and 1962-63. A comparison of population characteristics between geese captured in baited and in unbaited traps indicated that age ratios were similar between trapping methods and periods in the Two Buttes area. Also, no difference was found between sex ratios obtained during the study, regardless of trapping method. Percentages of adult geese with shot during 1962-63, increases in percentages of young geese with shot throughout the 1962-63 hunting season, and posthunting season percentages of young geese with shot were similar between baited and unbaited samples. We concluded that, within the limits of this study, the baited technique of gathering these data is a reliable sampling procedure.

Hartowicz, Edgar. EVENING ROOSTING HABITS OF WOOD DUCKS IN SOUTHEAST MISSOURI. J. Wildl. Mgmt. 29(2): 399-401, 1 fig. Apr. 1965. WR 118: 54

[Kans. Forestry, Fish & Game Comm., Pleasanton.] Abstract: Evening counts of wood ducks (Aix sponsa) coming to roost on an impoundment in southeast Missouri showed an early peak of numbers in mid-June, a level not again reached until early September.

Hildén, Olavi. ULKOSAARISTO SORSIEN PESIMÄYMPÄRISTÖNÄ. [OUTER ARCHIPELAGO AS BREEDING HABITAT FOR DUCKS.] Suomen Riista 17: 133-160, 12 figs. 1964. In Finnish with English summ. WR 118: 54

Summary: The article is a short Finnish version of a comprehensive paper (Hilden 1964) published in English in Ann. Zool. Fenn. 3: 1. It deals with the adaptation to marine conditions of ducks originally inhabiting inland waters, the ecological factors involved in this adaptation process, the sociality of ducks towards larids, their nesting success and the survival of their broods. These investigations have been made at Valassaaret, a group of islands in the middle of the Quark, the narrowest part of the Gulf of Bothnia.

Hindle, Edward. INTERNATIONAL WILDFOWL RESEARCH BUREAU. (Reprinted from IWRB Newsletter No. 12, Dec. 1961). IUCN Publ., New Ser. no. 3. p. 461-468. Dec. 1964. In English with French summ. WR 118: 54

[c/o British Museum, Cromwell Rd., London, England.]

Hodson, N. L. MALLARD'S DEVOTION TO NEST IN FACE OF FIRE. British Birds 58(3): 97. Mar. 1965. WR 118: 54

Four ducklings appeared to have hatched in a nest five days after all surrounding vegetation had been burned and seven of the eggs had been "scorched."

Höhn, E. O., A. K. Sarkar, and A. Dzubin. ADRENAL WEIGHT IN WILD MALLARD AND DOMESTIC DUCKS AND SEASONAL ADRENAL WEIGHT CHANGES IN THE MALLARD. Canadian J. Zool. 43(3): 475-487, 3 figs. May 1965. WR 118: 54

[Univ. Alberta, Edmonton.] Abstract: Mallards and domestic ducks are conspecific. Relative adrenal weight is similar in newly hatched mallards and domestic ducks. Immature mallards have higher relative adrenal weights than domestic ducks of similar age. Adult female mallards also have higher relative adrenal weights and a higher proportion of cortex in the adrenal than adult female domestic ducks, but adult males of the two strains fail to show these differences. Adrenal weight is related to testicular weight in mallards and domestic ducks, but no correlation is evident between adrenal weight and weight of the ovary and oviduct in mallards. Mallards show no adrenal weight sex differences at any of the three ages sampled. A seasonal adrenal weight cycle is apparent in both sexes of the mallard with a weight increase related to the breeding season and another increase during the autumn and winter. The higher

relative adrenal weights of (immature and adult female) mallards compared to those of domestic ducks are attributed to the mallards' greater exposure to stress. It is suggested that this effect operates also in adult male mallards but is obscured in the comparison with adult male domestic ducks because in the latter, which have much higher testicular weights, another factor responsible for the correlation between adrenal and testicular weight as noted above makes for increased adrenal weights.

Kalevi, Raitasuo. SINISORSAN SOSIAALISESTA KÄYTTÄYTYMISESTÄ. [SOCIAL BEHAVIOUR OF THE MALLARD, ANAS PLATYRHYNCHOS, IN THE COURSE OF THE ANNUAL CYCLE.] Suomen Riista 17: 65-92, 14 figs. 1964. In Finnish with English summ. WR 118: 55

Kear, Janet. WILDFOWL AND AGRICULTURE IN BRITAIN. IUCN Publ., New Ser. no. 3. p. 321-331. Dec. 1964. In English with French summ. WR 118: 55
[Wildfowl Trust, Slimbridge, Gloucestershire, England.]

Klimstra, W. D. GOLDEN GEESE. Business Perspectives 1(3): 3-10, 24. Spring 1965. WR 118: 55
[Coop. Wildl. Res. Lab., Southern Ill. Univ., Carbondale.] "It should be recognized that land use practices associated with agriculture, urban developments, roads, insect and weed controls, and industries are currently the principal culprits in the reduction of wildlife. If it were not for the hunter's dollars, literally millions of them, many species would long since have disappeared. Before us, then, is the necessity of an educational program to develop an enlightened and understanding human population. Let us not 'kill the geese that lay the golden eggs.'"

Koskimies, Jukka, and Lauri Lahti. RIISTALINTUJEMME, ERITYISESTI SORSALINTUJEN, POIKASTEN KYLMÄNKESTÄVYYDESTÄ. [COLD-HARDINESS OF NEWLY HATCHED DUCKLINGS.] Suomen Riista 17: 112-124, 7 figs. 1964. In Finnish with English summ. WR 118: 55
Essentially an abridgement in Finnish of the authors' longer paper [in English] that was published in Auk. [See WR 115: 5.]

Lebret, T. OECOLOGISCHE SUCCESSIE EN WATERWILDCONCENTRATIES. [ECOLOGICAL SUCCESSION OF WILDFOWL CONCENTRATIONS.] Ardea 52: 48-92. 1964. [From Ibis 107(1), 1965. In Dutch with English summ.] WR 118: 55

Leinonen, Matti. HAVAINTOJA KEURUUN REITIN PESIVÄSTÄ VESILINNUSTOSTA. [OBSERVATIONS ON NESTING WATERFOWL SPECIES IN A CHAIN OF LAKES AT KEURUU.] Suomen Riista 17: 164-172, 4 figs. 1964. In Finnish with English summ. WR 118: 55
There are more species nesting on the sea coast and archipelagos than on the large inland lakes of the type here described. Moreover, the density of the birds is higher in the sea areas. The number of species breeding on small inland lakes of high trophic level and on the large, barren lakes does not differ much, although the number of pairs--even without counting Larus ridibundus--is often 20-25 times higher in the former.--From summ.

Leitch, W. G. DUCKS UNLIMITED. IUCN Publ., New Ser. no. 3. p. 469-472. Dec. 1964. In English with French summ. WR 118: 55
[Ducks Unlimited, Winnipeg, Canada.]

Mikhel'son, G. A. [SOME PROMISING WAYS TO PRESERVE THE STOCKS OF NESTING DUCKS IN THICKLY POPULATED AREAS.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 95-97. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I174. In Russian.] WR 118: 55

Mikhel'son, G. A., G. T. Lein', V. A. Klimpin', and V. K. Liepa. [A STUDY OF LOCAL POPULATION DYNAMICS OF SOME DUCKS IN LATVIA BY MEANS OF CONTINUOUS BANDING OF BROODING FEMALES AND DUCKLINGS.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 97-99. 1962. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 13I180. In Russian.] WR 118: 56

Mikhelson, Kh. A., and others. [STUDY OF THE POPULATION DYNAMICS OF SOME DUCKS IN LATVIA BY RINGING ALL THE SITTING FEMALES AND THE YOUNG.] Ornitologia 6: 280-292. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 56

Molodovskii, A. V. [AQUATIC GAME BIRDS OF THE GOR'KII RESERVOIR AND WAYS OF USING THEM EFFICIENTLY.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 101-103. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I173. In Russian.] WR 118: 56

Olney, P. J. S. GRAVEL PITS AS WATERFOWL RESERVES. IUCN Publ., New Ser. no. 3. p. 414-420. Dec. 1964. In English with French summ. WR 118: 56
[Wildfowl Trust, Slimbridge, Gloucestershire, England.]

Philippona, J., and Th. Mulder. DE HAAGSCHE BEEMDEN ALS PLEISTERPLAATS VOOR WATERVOGELS. [HIBERNATING WATERFOWL IN THE POLDER HAAGSCHE BEEMDEN.] Levende Nat. 65(5): 97-101, illus. 1962. [From Biol. Abstr. 45(13), 1964. In Dutch.] WR 118: 56
The polder Haagsche Beemden, situated northwest of the city of Breda, Netherlands, is partly flooded in winter. Several spp. of waterfowl, among which geese and ducks predominate and hibernate here. Numbers observed are given.

Ryazankia, V. F. [INCUBATION OF WATERFOWL EGGS.] Ptitsevodstvo 3: 25-26. 1959. [From Biol. Abstr. 45(16), 1964, from Referat. Zhur., Biol., 1960, no. 45707. Transl. of Russian abstr.] WR 118: 56

Uspenskii, S. [DUCKS (ANAS SP.).] Okhota & Okhotnich'e Khoz. 8: 15-18. 1963. [From Biol. Abstr. 45(16), 1964, from Referat. Zhur., Biol., 1964, no. 3I184. Transl. of Russian abstr.] WR 118: 56
Brief description (range, coloring, size, weight) of 32 spp. of the duck fauna of the USSR.

Uspenskii, S. M. [THE EXPEDIENCY AND PROSPECTS OF REACCLIMATIZATION OF THE SNOW GOOSE ON THE MAIN SIBERIAN TUNDRA.] In: (The acclimatization of animals in the USSR.) Akad. Nauk Kazakhsk. SSR (Alma-Ata). p. 196-198. 1963. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I175. In Russian.] WR 118: 56

Uspenskii, S. M. [THE WHITE GOOSE (CHEN CAERULESCENS).] Priroda 52(9): 58-62, illus. 1963. [From Biol. Abstr. 45(13), 1964. In Russian.] WR 118: 56

Vaught, Richard W., and George C. Arthur. MIGRATION ROUTES AND MORTALITY RATES OF CANADA GEESE BANDED IN THE HUDSON BAY LOWLANDS. J. Wildl. Mgmt. 29 (2): 244-252, 6 figs. Apr. 1965. WR 118: 56
[Mo. Conserv. Comm., Columbia.] Abstract: A total of 454 Canada geese (Branta canadensis interior) were banded along coastal areas of western Hudson Bay during 1955, 1956, 1960, and 1961, to obtain data on hunting mortality and migrational patterns. Secondary objectives involved capturing techniques and measurement of production. Banding returns show that geese which nest between the Owl and Machichi rivers are associated with the Eastern Prairie population that winters in Swan Lake National Wildlife Refuge in north-central Missouri. Geese that nest in the coastal lowlands between the Mistigoken and Shagamu rivers are associated with the Mississippi Valley

population that winter in southern Illinois. First-year hunting mortality for 1955, 1956, 1960, and 1961 bandings were 12.8, 15.6, 10.4 and 5.4 percent, respectively. Total hunting mortality of the 1955 and 1956 bandings were 26.9 and 21.9 percent, respectively. Production as indicated by stream census in 1956 was later reflected by population trends at Swan Lake National Wildlife Refuge.

Viksne, Ya. A. [WINTERING OF WATERFOWL ON CERTAIN BODIES OF WATER IN LATVIA.] Ornitologia 6: 345-354. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 57

Weller, Milton W. CHRONOLOGY OF PAIR FORMATION IN SOME NEARCTIC AYTHYA (ANATIDAE). Auk 82(2): 227-235, 1 fig. Apr. 1965. WR 118: 57
[Iowa State Univ., Ames.] Redheads (Aythya americana) engaged in courtship activities before but started nesting after canvasbacks (A. valisineria). Lesser scaups started both courtship and nesting later than redheads, canvasbacks, and ring-necked ducks (A. collaris). Ring-necked ducks started both pairing and nesting slightly later than canvasbacks. Pairing of dabbling ducks was much earlier than pairing of diving ducks.

Wittgen, A. B. PAARVORMING EN BALTS VAN DE GEOORDE FUUT (PODICEPS CASPICUS). [COURTSHIP BEHAVIOUR IN THE BLACK-NECKED GREBE (PODICEPS CASPICUS).] Levende Nat. 65(3): 64-72, illus. 1962. [From Biol. Abstr. 45(17), 1964. In Dutch.] WR 118: 57

Wood, Jack S. SOME ASSOCIATIONS OF BEHAVIOR TO REPRODUCTIVE DEVELOPMENT IN CANADA GEESE. J. Wildl. Mgmt. 29(2): 237-244. Apr. 1965. WR 118: 57
[Western Mich. Univ., Kalamazoo.] Abstract: In the semidomesticated Canada goose (Branta canadensis), reproductive maturity is normally attained in the third year. A small percentage of geese become mature in the second year, and probably all first-year birds are immature. The onset of behavioral characteristics normally associated with maturity is not necessarily coincidental with physiological reproductive maturity. The behavioral display patterns in Canada geese may occur partly in response to neural stimulation, and this may account for their occurrence in immature individuals. Pairing occurs among physically immature birds and is not limited to periods of gonadal stimulation. Pairs containing immature individuals or pairs formed during periods of gonadal quiescence do not appear to be less stable than those between mature individuals or those formed during periods of gonadal stimulation. Territorial defense occurs in three phases. The first two phases were observed in both fruitful and unfruitful pairs. The third phase, when it occurred, always preceded an attempt to nest within 7 days. Territorial defense may be undertaken by physically immature individuals and does not necessarily indicate sexual maturity.

Wüst, Walter. THE ISMANINGER PONDS AS AN EXAMPLE OF A SUCCESSFUL ARTIFICIAL WETLAND. IUCN Publ., New Ser. no. 3. p. 421-423. Dec. 1964. In English with French summ. WR 118: 57
[Ornithol. Gesellschaft in Bayern, Germany.]

CRANES, RAILS, SHOREBIRDS

Ashmole, N. Philip. MOLT AND BREEDING IN POPULATIONS OF THE SOOTY TERN STERNA FUSCATA. Postilla 76: 1-18. 1963. [From Biol. Abstr. 45(15), 1964.] WR 118: 57
[B. P. Bishop Museum, Honolulu, Hawaii.]

Blum, P. N. [FULICA ATRA IN LATVIA.] Ornitologia 6: 272-279. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 57

Carrick, Robert. CONSERVATION OF IBISES IN AUSTRALIA. IUCN Publ., New Ser. no. 3. p. 332-335. Dec. 1964. In English with French summ. WR 118: 58
[CSIRO, Canberra, Australia.]

Creutz, G. ERNÄHRUNGSWEISE, NAHRUNGAUSWAHLE UND ABWEHR DES GRAUREIHERS (ARDEA CINEREA). [FEEDING HABITS, FOOD SELECTION AND DEFENSE IN THE GRAY HERON (ARDEA CINEREA).] Zool. Abhandlungen 27: 29-64. 1964. [From Ibis 107 (2), 1965. In German.] WR 118: 58

Garland, Ian. NESTING OF THE WOOLY-NECKED STORK. Bokmakierie 15(2): 15-16, illus. 1963. [From Biol. Abstr. 45(17), 1964.] WR 118: 58

Harris, M. P. THE FOOD OF SOME LARUS GULLS. Ibis 107(1): 43-53, 1 fig. Jan. 1965. WR 118: 58
[Edward Grey Inst., Oxford, England.]

Harris, M. P., and W. J. Plumb. EXPERIMENTS ON THE ABILITY OF HERRING GULLS LARUS ARGENTATUS AND LESSER BLACK-BACKED GULLS L. FUSCUS TO RAISE LARGER THAN NORMAL BROODS. Ibis 107(2): 256-257, 1 fig. Apr. 1965. WR 118: 58
[Edward Grey Inst., Oxford, England.]

Ishunin, G. I. THE FEEDING OF GREAT BLACK-HEADED GULLS IN THE REGION OF SIVASH ISLAND.] Ornitologia 6: 471-472. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 58

Karpovich, V. N. [A STUDY OF BELLING CHARACTERISTICS OF CAPELLA MEDIA ON THE BASIS OF RINGING.] Trudy Oksk. Gos. Zapovednika 4: 185-191. 1962. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 13I175 Transl. of Russian abstr.] WR 118: 58

Karpovich, V. N., and T. N. Solov'eva-Volynskaya. [EXPERIENCE IN ATTRACTING "BOG TERNS" TO NEST BY MEANS OF ARTIFICIAL FLOATS.] Trudy Oksk. Gos. Zapovednika 4: 349-352. 1962. [From Biol. Abstr. 45(17), 1964, from Referat. Zhur., Biol., 1963, no. 17I180. Transl. of Russian abstr.] WR 118: 58

Kuiper, F. J., and M. F. Mörzer Bruijns. HET ONDERZOEK NAAR HET VOORKOMEN VAN DE HOUTSNIP ALS BROEDVOGEL IN NEDERLAND. [THE INVESTIGATION ON THE NESTING OF THE WOODCOCK (SCOLOPAX RUSTICOLA) IN THE NETHERLANDS.] Levende Nat. 65(4): 73-77, illus. 1962. [From Biol. Abstr. 45(13), 1964. In Dutch.] WR 118: 58
Though thousands of migrating woodcocks are observed in the Netherlands in autumn and winter, the cases of nesting are rather few. These cases are charted for the year 1961. Since the year 1925 shooting of woodcocks in spring is prohibited in the Netherlands in an effort to protect the residential birds. Investigations are carried out to trace whether the observed increase in the number of nesting woodcocks can be ascribed to this change in the game act.

LaPave, Lynn D. REVISED STATUS OF LARIDAE IN EASTERN WASHINGTON. Murrelet 46(1): 7-11. Jan.-Apr. 1965. WR 118: 58
[Spokane, Wash.] An account of increases in numbers of individuals and of species occurring in the past 15-20 years, chiefly as a result of constructing new dams.

Myrberget, S. [THE CORNCRAKE IN NORWAY.] Sterna 6: 289-305. 1963. [From Ibis 107(1), 1965. In Norwegian with English summ.] WR 118: 58

Panov, E. N. [TERRITORIAL RELATIONSHIPS OF CHARADRII DURING FLIGHT.] Ornitologia 6: 418-423. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 58

Rashkevich, N. A. [THE ECOLOGY AND ECONOMIC IMPORTANCE OF LARUS ARGENTATUS IN THE LOWER REACHES OF THE AMU-DAR'YA RIVER.] Vest. Karakalpsk. Fil. Akad. Nauk Uzbeksk. SSR 4(10): 12-20. 1962. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 16I198. Transl. of Russian abstr.] WR 118: 59

Romanov, Y. M. [DISTRIBUTION OF SCOLOPAX RUSTICOLA IN THE MOSCOW REGION AND SOME FEATURES OF ITS SPRING ECOLOGY.] Ornitologia 6: 96-100. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 59

Shuntov, V. P. [SUMMER DISTIRUBTION OF KITTIWAKES (RISSA TRIDACTYLA POLLICARIS AND R. BREVIROSTRIS) IN THE BERING SEA.] Ornitologia 6: 325-330. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 59

Tomkins, Ivan R. WILSON'S PLOVER: SOME EGG WEIGHTS. Oriole 30(1): 67-68. Mar. 1965. WR 118: 59
[1231 East 50th St., Savannah, Ga.]

van der Cingel, N. A. OVER HET VISSEN EN BALTSEN VAN DE BLAUWE REIGER. [ON FISHING AND MATING BEHAVIOUR IN THE BLUE HERON.] Levende Nat. 65(1): 19-24, illus. 1962. [From Biol. Abstr. 45(17), 1964. In Dutch.] WR 118: 59
[Groningen Univ., Groningen, Netherlands.]

Vinogradov, V. V. [NESTING OF CHETTUSIA LEUCURA IN TRANS-CAUCASIA.] Ornitologia 6: 303-305. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 59

Weidmann, U. "COLOUR PREFERENCE" AND PECKING RESPONSE IN YOUNG MOORHENS GALLINULA CHLOROPUS AND COOTS FULICA ATRA. Ibis 107(1): 108-110. Jan. 1965. WR 118: 59
[Birkbeck Coll., London, England.]

Williams, I. C., and M. P. Harris. THE INFECTION OF THE GULLS LARUS ARGENTATUS PONT., L. FUSCUS L. AND L. MARINUS L. WITH CESTODA ON THE COAST OF WALES. Parasitol. 55(2): 237-256. May 1965. WR 118: 59
[Univ. Hull, Yorkshire, England.] Eleven species of cestodes were found in the 3 spp. of gulls, 9 in L. argentatus, 8 in L. fuscus and 6 in L. marinus. --From summ.

HAWKS AND OWLS

Ash, J. S. A REDUCTION IN NUMBERS OF BIRDS OF PREY IN FRANCE. Bird Study 12(1): 17-26. Mar. 1965. WR 118: 59
[Game Res. Assoc., Fordingbridge, Hampshire, England.] During 1960-1964 there has been a large reduction of birds of prey in France--a continuation of a trend which has been taking place during the past 30 years. Human persecution is credited as the main cause of decrease, but the adverse effects of persistent toxic chemicals is mentioned as a possible factor.

Attwell, R. I. G. SOME OBSERVATIONS ON FEEDING HABITS, BEHAVIOUR AND INTER-RELATIONSHIPS OF NORTHERN RHODESIAN VULTURES. Ostrich 34(4): 235-247. 1963. [From Biol. Abstr. 45(16), 1964.] WR 118: 59

Blondel, J. NOTES SUR LA BIOLOGIE ET LE RÉGIME ALIMENTAIRE DU FAUCON CÉRCERELLETTE FALCO NAUMANNI. [NOTES ON THE BIOLOGY AND FEEDING HABITS OF THE LESSER KESTREL FALCO NAUMANNI.] Nos Oiseaux 27: 294-298. 1964. [From Ibis 107(2), 1965. In French.] WR 118: 59

Blum, Joseph R. EAGLE VERSUS FISH. Condor 67(2): 190. Mar.-Apr. 1965. WR 118: 60

[Petersburg, Alaska.] A bald eagle (Haliaeetus leucocephalus) captured a fish too large to lift from the water, and towed the struggling fish about 100 yards to shore.

Bovet, J. ETUDE, PAR L'ANALYSE DU CONTENU DE PELOTES DE CHOUETTE EFFRAIE (TYTO ALBA), DE FLUCTUATIONS DANS LES POPULATIONS DE MICROMAMMIFERES. [STUDY BASED ON AN ANALYSIS OF THE DROPPINGS OF TYTO OF FLUCTUATIONS IN THE POPULATIONS OF MICROMAMMALS.] Rev. Suisse Zool. 70(2): 244-249. 1963. [From Biol. Abstr. 45(14), 1964. In French.] WR 118: 60

[Inst. Pharmacol., Univ. Lausanne, Lausanne, Switzerland.]

Bulachov, V. L. [THE ECOLOGY OF MILVUS KORSCHUM IN THE DNIEPER REGION.] Ornitologia 6: 111-126. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 60

Danilov, O. N. [ECOLOGY OF SOME PREDATORY BIRDS OF THE BARABINSK LOWLANDS.] In: (Problems of zoological studies in Siberia.) Knigoizdat (Gorno-Altaisk). p. 71-73. 1962. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 14I256. Transl. of Russian abstr.] WR 118: 60

Doerr, Phillip D., and James H. Enderson. AN INDEX OF ABUNDANCE OF THE GOSHAWK IN COLORADO IN WINTER. Auk 82(2): 284-285. Apr. 1965. WR 118: 60

[Colo. Coll., Colorado Springs.] Trapping proved more effective when automatic bow traps were used instead of bal-chatri traps in the trapping of birds of prey. If traps cannot be visited every two hours it is recommended that automatic bow traps be used--especially in cold weather.

Fairley, J. S., and A. McLean. NOTES ON THE SUMMER FOOD OF THE KESTREL IN NORTHERN IRELAND. British Birds 58(4): 145-148. Apr. 1965. WR 118: 60

Summary: Collections of pellets of the kestrel Falco tinnunculus were made in northern Ireland during the summer of 1964 and analysed for prey content. They contained mostly the remains of field mice Apodemus sylvaticus and birds. Wings collected around some nests suggested that the latter were mainly immature starlings Sturnus vulgaris. House mice Mus musculus, brown rats Rattus norvegicus, lesser shrews Sorex minutus and rabbits Oryctolagus cuniculus were also eaten, together with beetles (Geotrupes and Carabus).

Hanzák, Jan. VÝRI A VÝROVKY. [EAGLE-OWLS IN CZECHOSLOVAKIA.] Ziva 11(2): 68-70, illus. 1963. [From Biol. Abstr. 45(16), 1964. In Czech.] WR 118: 60

The present number of pairs is estimated at 75. The description of the birds and of their habitat is given. A discussion of some badly needed rules and regulations to protect more effectively the eagle-owls and other birds of prey are discussed.--From abstr. by J. Burnett.

Kadochnikov, N. P. [REPRODUCTION BIOLOGY OF OTUS SCOPS IN THE VORONEZH REGION.] Ornitologia 6: 104-111. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 60

Kostin, Yu. V. [CORRECTING THE NESTING AREA OF ACCIPITER GENTILIS IN THE UKRAINE.] Ornitologia 6: 473. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 60

Kuchin, A. P. [ECOLOGY OF SOME PREDATORY BIRDS FROM THE UPPER OB' RIVER REGION.] Zool. Zhur. 42(9): 1418-1420. 1963. [From Biol. Abstr. 45(16), 1964. In Russian with English summ.] WR 118: 60

[Geog. Soc. USSR, Altai Br., Biysk, USSR.] Data are presented on the population and distribution of Buteo buteo L., Circus pygargus L., Falco vespertinus L. and Asio flammeus Pontop. on the territory adjacent to the upper flow of the Ob' river.--Author.

McKelvey, Mike. UNUSUAL BATHING HABITS OF THE TURKEY VULTURE. Condor 67 (3): 265. May-June 1965. WR 118: 61
[Ariz. State Coll., Flagstaff.] The birds appeared to be making bathing movements when flying in the rain.

Mysterud, I. [BREEDING OF THE ROUGH-LEGGED BUZZARD, BUTEO LAGOPUS (PONT.), IN SOUTHEAST NORWAY IN 1962.] Sterna 6: 7-26. 1964. [From Ibis 107(1), 1965. In Norwegian with English summ.] WR 118: 61

Pithers, E. F. KESTREL TAKING BIRD MISSED BY PEREGRINE. British Birds 58 (3): 97-98. Mar. 1965. WR 118: 61
A chaffinch (Fringilla coelebs) escaped a pursuing peregrine (Falco peregrinus) by alighting in a bush but was immediately attacked in the bush and captured by a kestrel (Falco tinnunculus).

Pricam, R., and G. Zelenka. LE RÉGIME ALIMENTAIRE DE LA CHOUETTE EFFRAIE TYTO ALBA (SCOPOLI) SUR LA RIVE GAUCHE DU LÉMAN (EXTREMITÉ OCCIDENTALE). [THE FOOD HABITS OF THE BARN OWL ON THE LEFT BANK OF LÉMAN (WESTERN EXTREMITY).] Alauda 32: 176-195. 1964. [From Ibis 107(2), 1965. In French.] WR 118: 61

Rudebeck, Gustaf. AVES III. STUDIES ON SOME PALAEARCTIC AND ARCTIC BIRDS IN THEIR WINTER QUARTERS IN SOUTH AFRICA. 4. BIRDS OF PREY (FALCONIFORMES). In: (South African Animal Life, Hanstrom, Brinck, and Rudebeck, editors. Vol. 9.) Swedish Nat. Sci. Res. Council (Stockholm, Sweden). p. 418-516, illus. 1963. [From Biol. Abstr. 45(18), 1964.] WR 118: 61

Sevastianov, G. N. [ON THE FEEDING OF BUBO BUBO IN THE ARCHANGEL REGION.] Ornitologia 6: 481. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 61

Skutch, Alexander F. LIFE HISTORY NOTES ON TWO TROPICAL AMERICAN KITES. Condor 67(3): 235-246. May-June 1965. WR 118: 61
[El Quizarrá, San Isidro del General, Costa Rica.] "The South American swallow-tailed kite (Elanoïdes forficatus yetapa) and the double-toothed kite (Harpagus bidentatus)."

Sulkava, Pertti. VARPUSHAUKAN PESIMISAIKAISESTA KÄYTTÄYTYMISESTÄ JA RAVINNOSTA. [ON THE BEHAVIOUR AND FOOD HABITS OF THE SPARROW HAWK (ACCIPITER NISUS) DURING THE NESTING SEASON.] Suomen Riista 17: 93-105, 7 figs. 1964. In Finnish with English summ. WR 118: 61
Small birds comprised about 70% of the total prey, thrushes 16%, and voles 10%. The species most frequently caught were Fringilla coelebs and Phylloscopus trochilus, which are also abundant and most readily available. The proportion of voles was highest in May 1958 and 1962. Thrushes comprised 36% of the total weight of the prey in the nesting season. Only 2% of the prey were game animals, mostly young tetraonid chicks. The food habits of Finnish sparrow hawks differ clearly from those of Central European hawks in three respects: In Central Europe the English sparrow and other bird species of gardens and cultivated fields form the bulk of the prey but in Finland they are almost completely lacking in the prey of the nesting season. In Northern Europe the sparrow hawks take more thrushes and voles than in Central Europe. During the nesting season the sparrow hawk is quite insignificant from the standpoint of game management. Its winter food is insufficiently known in Finland.--From summ.

Sulkava, Seppo. KANAHAUKKA JA SEN RAVINTO ETELÄ- JA KESKI-SUOMESSA. [GOSHAWK (ACCIPITER GENTILIS) AND ITS FEEDING HABITS IN SOUTH AND CENTRAL FINLAND.] Suomen Riista 17: 22-42, 6 figs. 1964. In Finnish with English summ. WR 118: 61
The proportion of tetraonids in the spring food varies in accordance with their abundance. Even in years of low abundance their percentage is 60-65 at Ilmajoki. During the nestling period the total number of prey is smaller in years with low tetraonid populations than in years with abundant populations.

Squirrels are caught only when they are abundant and tetraonids simultaneously scarce. Hazel grouse is the preferred prey species among tetraonids. A goshawk may become specialized in catching some prey species or in hunting within a limited area. In Finland it seems to learn to take tetraonids in winter to such an extent that it also prefers tetraonids in late spring and summer when there are many migrant bird species available. In summer it may several times return to a place where it found a tetraonid brood.--From summ.

Varshavskii, S. N. [FEATURES OF THE FEEDING OF THE BLACK KITE MILVUS KORSCHUN IN THE AKTYBA STEPPES.] Ornitologia 6: 210-215. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 62

Vinogradov, V. V. [REPRODUCTION OF AEGYPIUS MONACHUS IN THE BOZDAG.] Ornitologia 6: 222-226. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 62

BLACKBIRDS, STARLINGS, CROWS

Belskaya, G. S. [FEEDING OF THE YOUNG OF THE DESERT RAVEN.] Ornitologia 6: 464. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 62

Dunson, William A. PHYSIOLOGICAL ASPECTS OF THE ONSET OF MOLT IN THE REDWINGED BLACKBIRD. Condor 67(3): 265-269, 3 figs. May-June 1965. WR 118: 62

[Univ. Mich., Ann Arbor.] "The onset of molt in the Redwinged Blackbird (Agelaius phoeniceus) was studied during June, July, and August, 1960, in relation to the size of the bursa of Fabricius, the incubation patch, the gonads, and the cloacal protuberance."

Dyer, Melvin Ivon. RADAR AND MORPHOMETRIC STUDIES ON TRANSIENT RED-WINGED BLACKBIRD POPULATIONS. Ph.D. thesis, Univ. Minn. 163 p. 1964. [Long abstr. In Dissertation Abstr. 25(9), 1965.] WR 118: 62

Goodliffe, Frank A. DOG-COLLARED SOMBRE BLACKBIRD (CLERICUS POLYDENOMINATA) [IDENTIFICATION, HABITS, DISTRIBUTION, NESTING, FEEDING]. Bokmakierie 15(2): 9. 1963. [From Biol. Abstr. 45(17), 1964.] WR 118: 62

Lloyd, James A. EFFECTS OF ENVIRONMENTAL STIMULI ON THE DEVELOPMENT OF THE INCUBATION PATCH IN THE EUROPEAN STARLING (STURNUS VULGARIS). Physiol. Zoöl. 38(2): 121-128, 7 figs. on 2 pls. Apr. 1965. WR 118: 62

[Albert Einstein Med. Center, Philadelphia, Pa.] "The seasonal light change is a crucial environmental stimuli for initiating endocrine activity leading to patch development and that other stimuli, while able to enhance incubation-patch development are not essential for the development of the patch in the females, but are necessary for the development of the patch in males."

Malik, N. E. [THE GRAY STARLING, A PROTECTOR OF THE TAIGA.] Lesn. Khoz. 5: 46-47. 1959. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1960, no. 20781. Transl. of Russian abstr.] WR 118: 62

Mayfield, Harold. CHANCE DISTRIBUTION OF COWBIRD EGGS. Condor 67(3): 257-263. May-June 1965. WR 118: 62

[Waterville, Ohio.] Summary: The brown-headed cowbird lays one egg in about 60% of hosts' nests but sometimes lays two or more eggs in a nest. Nine studies of host species were examined, and in five of these the distribution of cowbird eggs was nearly random as shown by comparison with a Poisson series. In eight studies, the distribution of subsequent cowbird eggs after the first in each nest was nearly random. I propose the hypothesis that the appearance of nonrandomness in some studies is a result of a sampling error

caused by the human observer's failure to find some nests abandoned early in existence because of the deposit of a cowbird egg. If the data from studies of the Kirtland warbler and field sparrow are adjusted in accordance with this hypothesis, there is then a close fit between the presumed actual distribution and that predicted from a random placement of cowbird eggs.

Mustafaev, G. T. [THE UTILIZATION BY USEFUL BIRDS OF CORVIDAE NESTS IN THE KURA RIVER LOWLAND.] In: (Materials of the 3rd All Union Ornithological Conference, 1962.) L'vovsk. Univ. (L'vov) 2: 106-107. 1962. [From Biol. Abstr. 45(16), 1964, from Referat. Zhur., Biol., 1963, no. 17I156. In Russian.] WR 118: 63

Mustafaev, G. T. [NESTS OF CORVIDAE AS NESTING SITES FOR USEFUL BIRDS.] Ornitologia 6: 476-477. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 63

Selander, Robert K., and Ronald J. Hauser. GONODAL AND BEHAVIORAL CYCLES IN THE GREAT-TAILED GRACKLE. Condor 67(2): 157-182, 6 figs. Mar.-Apr. 1965. WR 118: 63

[Univ. Texas, Austin.] Testes of males older than one year were in breeding condition during Apr.-June, with peaks in activity during early Apr. and in June. Recredescence of the testes occurred 2-3 weeks later in first year males than in older males. Testes of first year males were smaller than those of older males throughout the breeding season. Enlargement of ovarian follicles occurred in females during Feb.-Mar., the first eggs were laid in the first week of Apr. Older females were always ahead of first-year females in development of ovarian follicles. Gonad development was correlated with breeding behavior.

Spaans, A. L., and C. Swennen. OVER TERUGMELDINGEN VAN BIJ EEN SLAAPPLAATS GERINGDE SPREEUWEN. [ON RECAPTURES OF STARLINGS BANDED IN A SLEEPING QUARTER.] Levende Nat. 65(1): 8-11, illus. 1962. [From Biol. Abstr. 45(14), 1964. In Dutch.] WR 118: 63

Symonds, A. E. J. THE RATE OF BUILD-UP AND EVACUATION OF COUNTRY STARLING ROOSTS AND THE EFFECT OF SEVERE WINTER CONDITIONS ON THESE PROCEDURES. Bird Study 12(1): 8-16, 4 figs. Mar. 1965. WR 118: 63

Starlings build up roosts at a progressive rate. A tentative method of obtaining an estimate of the change in size of a distant roost by counting the number of birds passing along a flight line to or from the roost is presented. --From summ.

OTHER BIRDS

Abusalyamov, I. A. [ON THE ECOLOGY OF CHAIMARORNIS LEUCOCEPHALUS IN THE PAMIR MOUNTAINS.] Ornitologia 6: 264-267. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 63

Adamyan, M. S. [MELANOCORYPHA BIMACULATA IN ARMENIA.] Ornitologia 6: 238-245. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 63

Aniken, V. I. [NESTING OF FRINGILLA MONTIFRINGILLA IN THE SOUTH OF THE GORKII REGION.] Ornitologia 6: 463. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 63

Barancheev, L. M. [REPRODUCTION BIOLOGY OF EMBERIZA AUREOLA ORNATA IN THE AMUR REGION.] Ornitologia 6: 173-176. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 63

Basiev, Z. K., and S. P. Chunikhlin. [ON THE ECOLOGY OF PHOENICURUS ERYTHROGASTER IN KARBARDINO-BALKARIA.] Ornitologia 6: 235-237. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 64

Berman, D. I., and G. V. Kolonin. [THE NESTING OF LEUCOSTICTE NEMORICOLA IN TUVA.] Ornitologia 6: 268-271. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 64

Carrick, Robert. PENGUINS OF MACQUARIE ISLAND (BEHAVIOR, NESTING, IDENTIFICATION). Am. Zool. 3(4): 498. 1963. [From Biol. Abstr. 45(13), 1964.] WR 118: 64
[CSIRO, Canberra, Australia.] Abstract only.

Fuchimoto, Hajime. [A METEROLOGICAL CONSIDERATION ON THE BREEDING PLACES AND MIGRATION OF DIOMEDEA ALBATRUS.] Misc. Repts. Yamashina's Inst. Ornithol. & Zool. 3(4): 247-259. 1963. [From Biol. Abstr. 45(14), 1964. In Japanese.] WR 118: 64

Gillham, Mary E. BREEDING HABITATS OF THE WHITE-FACED STORM PETREL (PELAGODROMA MARINA) IN EASTERN BASS STRAIT. Papers & Proc. Roy. Soc. Tasmania 97: 33-41, illus. 1963. [From Biol. Abstr. 45(13), 1964.] WR 118: 64
[Univ. Coll. Wales, Cardiff, Wales.]

Gross, A. O., J. M. Moulton, and C. E. Huntington. NOTES ON THE WEDGE-TAILED SHEARWATER AT HERON ISLAND, GREAT BARRIER REEF, AUSTRALIA. Atoll Res. Bull. 97/100: 1-11, illus. 1963. [From Biol. Abstr. 45(18), 1964.] WR 118: 64
[Bowdoin Coll., Brunswick, Maine.]

Jones, N. V. THE SHEATHBILL, CHIONIS ALBA (GREMLIN), AT SIGNY ISLAND, SOUTH ORKNEY ISLANDS. Brit. Antarctic Surv. Bull. 2: 53-71. 1963. [From Ibis 107(1), 1965.] WR 118: 64

Kumerloeve, H. SUR LA DISTRIBUTION D'IRANIA GUTTURALIS (GUÉRIN) EN ASIE MINEURE ET DANS LES RÉGIONS VOISINES. [ON THE DISTRIBUTION OF IRANIA GUTTURALIS (GUÉRIN) IN ASIA MINOR AND IN THE ADJACENT REGIONS. Alauda 32: 97-104. 1964. [From Ibis 107(1), 1965. In French.] WR 118: 64
Review of the occurrence of this species of chat in and around Asia Minor, with notes on its habits.

Kuzyakin, A. P. [ON THE BIOLOGY OF BRACHYRHAMPHUS MARMORATUS.] Ornitologia 6: 315-320. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 64

Lobachev, V. S. [DISTRIBUTION OF REMIZ PENDULINUS IN WEST SIBERIA.] Ornitologia 6: 474. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 64

Locke, Louis N. PYRRHULOXIA FEEDING ON CACTUS FRUITS. Condor 67(2): 190. Mar.-Apr. 1965. WR 118: 64
[Patuxent Wildl. Res. Center, Laurel, Md.] A male and a female Pyrrhuloxia sinuata were observed feeding on fruit of Christmasberry cholla (Opuntia lepticollis).

McKinley, Daniel. THE CAROLINA PARAKEET IN THE UPPER MISSOURI AND MISSISSIPPI RIVER VALLEYS. Auk 82(2): 215-226. Apr. 1965. WR 118: 64
[Lake Erie Coll., Painesville, Ohio.] There are numerous valid records of the former occurrence of Carolina parakeets (Conuropsis carolinensis) in Nebr. and Iowa and two from southeastern Wis. There are no available records from Minn.

Naumov, R. L., and G. S. Kislenko. [PHYLLOSCOPUS SCHWARZI AND P. FUSCATUS IN CENTRAL SIBERIA.] Ornitologia 6: 146-152. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 64

Nazarova, I. V. [ECOLOGICAL AND MORPHOLOGICAL FEATURES OF SOME WOODPECKERS.] Ornitologia 6: 478-479. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 65

Nickell, Walter P. HABITATS, TERRITORY AND NESTING OF THE CATBIRD. Am. Midland Nat. 73(2): 433-478, 7 figs. Apr. 1965. WR 118: 65
[Cranbrook Inst. Sci., Bloomfield Hills, Mich.] An intensive study of 4,085 nests of the catbird (Dumetella carolinensis) was made in Michigan, Ohio, Kentucky, and Ontario during the 27-year period 1934-1960. Emphasis was on habitats, nest sites, nest materials, clutch size, incubation and behavior.--From abstr. Monographic.

Norderhaug, M. [STUDIES OF THE ARCTIC TERN IN WEST SPITSBERGEN.] Fauna 17: 137-154. 1964. [From Ibis 107(1), 1965. In Norwegian with English summ.] WR 118: 65

Rakhilin, V. K. [JOINT NESTING OF STURNIA STURNINA AND PASSER MONTANUS.] Ornitologia 6: 481. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 65

Richardson, Frank. BREEDING AND FEEDING HABITS OF THE BLACK WHEATEAR OENANTHE LEUCURA IN SOUTHERN SPAIN. Ibis 107(1): 1-16, 4 figs. + 1 pl. Jan. 1965. WR 118: 65
[Univ. Wash., Seattle.]

Sanger, Gerald A. OBSERVATIONS OF WILDLIFE OFF THE COAST OF WASHINGTON AND OREGON IN 1963, WITH NOTES ON THE LAYSAN ALBATROSS (DIOMEDEA IMMUTABILIS) IN THIS AREA. Murrelet 46(1): 1-6, 2 figs. Jan.-Apr. 1965. WR 118: 65
[Univ. Wash., Seattle.] Occurrence records for several species of oceanic birds, land birds, cetaceans and seals from a 110-day cruise of the Pacific Ocean in a study of the effluent of the Columbia River.

Simmons, K. E. L. SOME BEHAVIOUR CHARACTERS OF THE BABBLERS (TIMALIIDAE). Avicult. Mag. 69(5): 183-193. 1963. [From Biol. Abstr. 45(17), 1964.] WR 118: 65

Skoczylas, Rafal. DYNAMIKA LICZEBNOŚCI, ROZMIESZCZENIE PIONOWE I ZACHOWANIE TERYTORIALNE DZIECIOŁA PSTREGO DUZEGO (DRYOBATES MAIOR L.) W BORZE SOSNOWYM. [POPULATION DYNAMICS, VERTICAL DISTRIBUTION AND TERRITORIAL BEHAVIOR OF THE GREAT SPOTTED WOODPECKER (DRYOBATES MAIOR) IN A PINE FOREST.] Ekol. Polska Ser. A 9(14): 229-243, illus. 1961. [From Biol. Abstr. 45(17), 1964. In Polish with German summ.] WR 118: 65
[Inst. Zool. Univ. Warsaw, Warsaw, Poland.]

Skutch, Alexander F. A NATURALIST SPIES ON THE SILKY-FLYCATCHER. Animal Kingdom 68(1): 22-27, illus. Jan.-Feb. 1965. WR 118: 65
[San Isidro del General, Costa Rica.] Observations on breeding behavior and biology of the long-tailed silky flycatcher (Ptilogonys caudatus).

Strokov, V. V. [JYNX TORQUILLA IN ARTIFICIAL NEST-SITES.] Ornitologia 6: 483. 1963. [From Ibis 107(2), 1965. In Russian.] WR 118: 65

Uys, C. J. SOME OBSERVATIONS (BEHAVIOR, HABITAT, ECOLOGY) ON THE STANLEY BUSTARD (NEOTIS DENHAMI) AT THE NEST. Bokmakierie 15(2): 2-4, illus. 1963. [From Biol. Abstr. 45(17), 1964.] WR 118: 65

Ward, Peter. FEEDING ECOLOGY OF THE BLACK-FACED DIOCH QUELEA QUELEA IN NIGERIA. Ibis 102(2): 173-214, 23 figs. Apr. 1965. WR 118: 65
[Univ. Singapore, Singapore, Singapore.]

Wittgen, A. B. ACHTERUITGANG VAN DE KLAPEKSTER (LANIUS EXCUBITOR) IN NOORDBRABANT. [THE DECLINE IN THE NUMBER OF GREAT GREY SHRIKES (LANIUS EXCUBITOR) IN THE PROVINCE OF NOORDBRABANT, NETHERLANDS.] Levende Nat. 65 (2): 28-33, illus. 1962. [From Biol. Abstr. 45(13), 1964. In Dutch.] WR 118: 66

Increasing reclamation of moorland, drainage programs, and expansion of recreation areas are said to be responsible for the virtual disappearance of this bird.

REPTILES AND AMPHIBIANS

Almaca, C. ANFIBIOS PORTUGUESES. APONTAMENTOS SOBRE A SUA SISTEMÁTICA E ECOLOGIA. [PORTUGUESE AMPHIBIA. NOTES ON THEIR SYSTEMATICS AND ECOLOGY.] Naturalia 8(17/18): 47-52. 1959/1961. [From Biol. Abstr. 45(15), 1964. In Portuguese.] WR 118: 66

Brandon, Ronald A. MORPHOLOGICAL VARIATION AND ECOLOGY OF THE SALAMANDER PHAEOGNATHUS HUBRICHTI. Copeia 1965(1): 67-71, 6 figs. Mar. 1965. WR 118: 66

[Southern Ill. Univ., Carbondale.] On the burrowing and feeding habits of Phaeognathus hubrichti and its internal parasites.

Brattstrom, Bayard H. BODY TEMPERATURES OF REPTILES. Am. Midland Nat. 73 (2): 376-422, 16 figs. Apr. 1965. WR 118: 66

[Calif. State Coll., Fullerton.] A summary of body temperatures of reptiles has been made on the basis of some 9000 body, air, soil, and water temperatures taken or recorded in the literature for 161 species of reptiles. The range and mean body temperature for the various groups of reptiles are: turtles: 8.0 to 37.8, mean: 28.4; Sphenodon: 6.2 to 18.0, mean: 12.5; American alligator: 26-37, mean: between 32 and 35; snakes: 9.0 to 38.0, mean: 25.6; lizards: 11.0 to 46.4, mean: 29.1. Thermoregulation in reptiles is both behavioral (emergence, retreat, selection of temperatures, basking, orientation, postural changes, etc.) and physiological (evaporative cooling, vasomotor responses affecting rates of heating and cooling, and limited heat production in brooding female Indian pythons).--From abstr.

Brown, Jerram L. STABILITY OF COLOR PHASE RATIO IN POPULATIONS OF PLETHODON CINEREUS. Copeia 1965(1): 95-98. Mar. 1965. WR 118: 66

[Univ. Rochester, Rochester, N. Y.] The unstriped phase of Plethodon cinereus remained at about the same proportion of the population in 2 localities in Ithaca, New York, in censuses 10 years apart. Seasonal variations in frequencies of the 2 color phases were not significant.--From abstr.

Bury, R. Bruce, and Clifford R. Johnson. NOTE ON THE FOOD OF PLETHODON ELONGATUS IN CALIFORNIA. Herpetologica 21(1): 67-68. 28 Apr. 1965. WR 118: 66

[Humboldt State Coll., Arcata, Calif.]

Dixon, James R., and Robert G. Webb. VARIATION IN A LARGE BROOD OF THE MEXICAN WATER SNAKE, NATRIX VALIDA VALIDA (KENNICOTT) IN SINALOA. Southwestern Nat. 10(2): 140-141, 1 fig. 30 Apr. 1965. WR 118: 66

[N. Mex. State Univ., University Park.] Brood size was 34 (21♂♂: 13♀♀).

Dole, Jim W. SUMMER MOVEMENTS OF ADULT LEOPARD FROGS, RANA PIPIENS SCHREBER, IN NORTHERN MICHIGAN. Ecology 46(3): 236-255, 12 figs. Spring 1965. WR 118: 66

[San Fernando Valley State Coll., Northridge, Calif.] Leopard frog movements were studied by use of a spool of thread (attached to the back of a frog) that unwound as the frog moved. A total of 136 frogs were trailed 681 frog-days. Frogs in fair summer weather spent more than 95% of their time sitting in "forms". Several frogs remained in the same form for more than 24 hours; one

remained for more than 5 days. Most movement was between 8:00 pm and 8:00 am. Relatively long distance, direct movements were made in night rains; one frog traveled 240 m in 2 nights. The most rapid movement was 46.6 m per hour.

Fatkulova, A. B. [STUDIES ON THE BIOLOGY OF THE AGILE LIZARD IN THE ENVIRONS OF KARAGANDA.] Uch. Zap. Karagandinsk. Gos. Pedagog. Inst. 3(2): 99-107. 1962. [From Biol. Abstr. 45(13), 1964, from Referat. Zhur., Biol., 1963, no. 21I89. Transl. of Russian abstr.] WR 118: 67
"Lacerta agilis exigua".

Ferguson, Denzel E., Hobart F. Landreth, and Marvin R. Turnipseed. ASTRONOMICAL ORIENTATION OF THE SOUTHERN CRICKET FROG, ACRIS GRYLLUS. Copeia 1965 (1): 58-66, 6 figs. 18 Mar. 1965. WR 118: 67
[Miss. State Univ., State College.] The orientation of southern cricket frogs was tested in a circular pen 60 ft in diameter located in water. With only the sun and sky visible, frogs moved in a direction corresponding to a line drawn perpendicularly toward the home shoreline.--From abstr.

Gehlbach, Frederick R. HERPETOLOGY OF THE ZUNI MOUNTAINS REGION, NORTHWESTERN NEW MEXICO. Proc. U.S. Natl. Museum 116(3505): 243-332, 10 figs. 1965. WR 118: 67
[Baylor Univ., Waco, Texas.]

Hain, Michael L. ECOLOGY OF THE LIZARD UTA MEARNSI IN A DESERT CANYON. Copeia 1965(1): 78-81, 4 figs. Mar. 1965. WR 118: 67
[Univ. Calif., Riverside.] A mature male and a mature female shared a territory. Each defended their territory against intruding lizards of their own sex. Greater numbers of lizards were captured around the numerous isolated water holes of the canyon floor than in areas where such water was absent. The large numbers of insects (mainly dipterans) at these water holes might account for the high population densities of this insectivorous lizard in these areas. Egg laying occurred near the end of June. No active ecological competition was observed between U. mearnsi and other lizards of the area.--From abstr.

Huheey, James E. A MATHEMATICAL METHOD OF ANALYZING BIOGEOGRAPHICAL DATA. I. HERPETOFAUNA OF ILLINOIS. Am. Midland Nat. 73(2): 490-500, 4 figs. Apr. 1965. WR 118: 67
[Univ. Md., College Park.] Abstract: A divergence factor (D) is defined which indicates the rate of species replacement in a given area. All geographical points having equal values of D may be connected by a contour line (isometabasis). The resulting contour map indicates regions of little change (equivalent to biotic provinces) and regions of rapid change (equivalent to province boundaries). This procedure reduces the possibility of subjective bias in analyzing zoogeographic data. The herpetofaunal data from the state of Illinois are used to illustrate the potential advantages of the method.

Irwin, Louis Neal. DIEL ACTIVITY AND SOCIAL INTERACTION OF THE LIZARD UTA STANSBURIANA STEJNEGERI. Copeia 1965(1): 99-101, 2 figs. Mar. 1965. WR 118: 67
[Texas Technol. Coll., Lubbock.] Activity of U. stansburiana in its natural habitat varied inversely with temperature and intensity of solar radiation. Courtship and territorial defense occurred throughout the day in a wide thermal range. Strong territoriality promoted a primarily monogamous breeding structure.--From abstr.

Johnson, Clifford Ray, and R. Bruce Bury. FOOD OF THE PACIFIC TREEFROG, HYLA REGILLA BAIRD AND GIRARD, IN NORTHERN CALIFORNIA. Herpetologica 21(1): 56-58. 28 Apr. 1965. WR 118: 67
[U.S. Navy, Mobile Construction Battalion Five, c/o F.P.O., San Francisco, Calif.]

Licht, Paul. EFFECTS OF TEMPERATURE ON HEART RATES OF LIZARDS DURING REST AND ACTIVITY. Physiol. Zoöl. 38(2): 129-137, 2 figs. Apr. 1965. WR 118: 68
[Univ. Calif., Berkeley.]

Lynn, Robert T. A COMPARATIVE STUDY OF DISPLAY BEHAVIOR IN PHRYNOSOMA (IGUANIDAE). Southwestern Nat. 10(1): 25-30, 1 fig. 15 Mar. 1965. WR 118: 68
[Presbyterian Coll., Clinton, S. C.] Most of the behavior patterns typical of iguanids are lacking in the genus Phrynosoma. It was graphically shown that there is a decrease in complexity of display patterns from primitive to recent forms.

Mayhew, Wilbur W. REPRODUCTION IN THE SAND-DWELLING LIZARD UMA INORNATA. Herpetologica 21(1): 39-55, 8 figs. 28 Apr. 1965. WR 118: 68
[Univ. Calif., Riverside.]

Neill, Wilfred T. VIVIPARITY IN SNAKES: SOME ECOLOGICAL AND ZOOGEOGRAPHICAL CONSIDERATIONS. Am. Nat. 98(898): 35-56, illus. 1964. [From Biol. Abstr. 45(16), 1964.] WR 118: 68
[122 Homecrest Rd., New Port Richey, Fla.]

Neill, Wilfred T. NOTES ON AQUATIC SNAKES, NATRIX AND TRETANORHINUS, IN CUBA. Herpetologica 21(1): 62-67, 4 figs. 28 Apr. 1965. WR 118: 68
[122 Homecrest Rd., New Port Richey, Fla.] "The two aquatic, piscivorous snakes of Cuba appear to be separated by habitat, the Natrix being largely confined to red mangrove swamp, and the Tretanorhinus inhabiting most of the other aquatic situations of the island."

Ruibal, Rodolfo. AN ANNOTATED CHECKLIST AND KEY TO THE ANOLINE LIZARDS OF CUBA. Bull. Mus. Comp. Zool. 130(8): 473-520, illus. 1964. [From Biol. Abstr. 45(15), 1964.] WR 118: 68
A total of 22 spp. of Anolis and the monotypic genus Chamaeleois represent the anoline lizards on the island of Cuba.

Schmid, William D. SOME ASPECTS OF THE WATER ECONOMIES OF NINE SPECIES OF AMPHIBIANS. Ecology 46(3): 261-269, 5 figs. Spring 1965. WR 118: 68
[Univ. N. Dak., Grand Forks.] Species from more aquatic habitats had lower tolerances to desiccation than terrestrial species but were able to endure hydration for longer periods of time. The skin was less permeable to water and the effective osmolarity of blood plasma was less in aquatic than terrestrial species.

Smirnovskii, B. N. [POISONOUS SNAKES OF KAZAKHSTAN.] Kazsel'khozgiz (Alma-Ata). 64 p., illus. 1963. 10 kopecks. [From Biol. Abstr. 45(18), 1964, from Referat. Zhur., Biol., 1963, no. 18I68K. In Russian.] WR 118: 68

Snow, D. W. THE GIANT TORTOISES OF THE GALAPAGOS ISLANDS / THEIR PRESENT STATUS AND FUTURE CHANCES. Oryx 7(6): 277-290, 2 figs. + 8 pls. Dec. 1964. WR 118: 68

Twitty, Victor, David Grant, and Oscar Anderson. LONG DISTANCE HOMING IN THE NEWT TARICHA RIVULARIS. Proc. Natl. Acad. Sci. 51(1): 51-58, illus., map. 1964. [From Biol. Abstr. 45(18), 1964.] WR 118: 68
[Stanford Univ., Stanford, Calif.]

Whitford, Walter G., and Victor H. Hutchison. EFFECT OF PHOTOPERIOD ON PULMONARY AND CUTANEOUS RESPIRATION IN THE SPOTTED SALAMANDER, AMBYSTOMA MACULATUM. Copeia 1965(1): 53-58, 3 figs. 18 Mar. 1965. WR 118: 68
[Univ. R. I., Kingston.]

AUTHOR INDEX

	Page
Abdyldabekov, K. A.	48
Abramov, K. G.	27
Abusalyamov, I. A.	63
Adamyan, M. S.	63
Airapet'yants, A. E.	22
Airumyan, K. A.	49
Aizin, B. M.	25
Allen, Durward L.	7
Almaca, C.	66
Alvarez, Ticul	22
Amadon, D.	38
Anderson, Allen E.	32,33
Anderson, Anders H.	38
Anderson, Oscar	68
Anderson, Ted R.	47
Andersson, Per	15
Andreev, I. P.	24
Aniken, V. I.	63
Ardamatskaya, T. B.	53
Armitage, Kenneth B.	22
Arnaud, P.	38
Arneman, H. F.	2
Arthur, George C.	56
Artimo, Atso	17
Ash, J. S.	2,48,59
Ashmole, N. Philip	57
Atkinson-Willes, G. L.	4,53
Attwell, R. I. G.	59
Aviña, Clemencia E.	22
Bachurikhina, L. S.	17
Bakken, Asbjørn	34
Banks, Richard C.	38
Barabash-Nikiforov, I. I.	44
Barancheev, L. M.	63
Bartel, Monroe H.	16
Basiev, Z. K.	64
Beaucournu, J.-C.	13
Beauregard, M.	26
Beeman, Robert D.	27,28
Belov	12
Belskaya, G. S.	62
Berman, D. I.	64
Bhatia, H. M.	30
Bibikov, D. I.	22
Biggers, J. D.	25
Billard, Ruth S.	15
Birkenholz, Dale E.	17
Blevins, Robert L.	2
Bligh, John	38
Blok, E.	8
Blondel, J.	59
Blum, Joseph R.	60
Blum, P. N.	57
Blume, D.	38
Boer Leffef, W. J.	11
Bookhout, Theodore A.	15
Booth, Ernest S.	13
Borodin, L. P.	13
Bothschafter, Elmar	12
Bovet, J.	60
Bowes, A. L.	53
Bowles, John	45
Boyd, H.	53
Boxi, A. J.	30
Brandon, Ronald A.	66
Brashears, Sidney C.	6
Brattstrom, Bayard H.	66
Breitenbach, Robert P.	49
Broadbooks, Harold E.	36
Brown, George W.	32
Brown, Jerram L.	66
Brown, Larry N.	36
Bruce, James A.	46
Brush, Alan H.	38
Buckner, C. H.	13,47
Buisman, H. H.	8
Bulachov, V. L.	60
Bull, P. C.	16
Bur. Sport Fisheries & Wildl.	4,8
Bury, R. Bruce	66,67
Cahalane, Victor H.	27
Camp, Wallace J.	2
Campos, E. G.	17
Carmon, J. L.	17
Carrick, Robert	58,64
Carter, Oliver R.	2
Cebula, Jerome J.	6
Cherkasskii, E. S.	25
Child, Graham	27
Chilingaryan, A. A.	11
Chunikhlin, S. P.	64
Clancey, P. A.	53
Clement, Roland C.	9
Clough, Garrett C.	17
Cole, William A.	2
Colling, A. W.	9
Colorado	8
Conder, Peter	9
Conway, William G.	34
Cooch, F. G.	38
Creed, R. F. S.	25
Creutz, G.	58
Cross, Stephen P.	13
Crutchfield, James	7
Csordas, S. E.	35
Cuello, Juan	44
Cummins, Joseph F.	2
Dalke, Paul D.	27,28
Dalquest, Walter W.	12
Damm, Robert	35
Danilov, O. N.	60
Dansereau, Pierre	3
Davis, Frederic W.	5
Davis, R. A.	25
Davis, Wayne H.	13
Davis, William B.	14
De Byle, Norbert V.	14
De Coursey, G.	14
De Coursey, Patricia	14
Dementev, G. P.	38

	Page
Denman, Norris S.	11
Dereta, V. P.	50
Desert Bighorn Council	28
DeVries, Arthur L.	35
Dijk, J. van	9
Dillery, Dean G.	39
Dixon, James R.	66
Dobrokhotov, B. P.	19
Docter, D. A.	9
Dodds, Donald G.	16
Doerr, Phillip D.	60
Dole, Jim W.	66
Dolgorukov, E. M.	12
Donika, I. S.	47
Doude Van Troostwijk, W. J.	52
Dow, Douglas D.	39
Driver, Peter M.	39
Drozdov, N. N.	46
Dubrovskii, A.	47
Duffey, E.	9
Dumitresco, Margareta	14
Dunson, William A.	39,62
Dwyer, P. D.	14
D'yakov, Yu. V.	24
Dyer, Melvin Ivon	62
Dzubin, A.	54
Eads, R. B.	17
Egerton, P. J. Marjoribanks	28
Egorov, Yu. E.	26
Elder, William H.	32
Ellis, John W.	53
El-Rawi, B. M.	16
Emel'yanova, N. D.	14
Emlesa, S. T.	17
Enderson, James H.	60
Enemar, A.	46
Erbaiva, M. A.	18
Errington, Paul L.	9
Esslinger, J. H.	13
Eygenraam, J. A.	9
Fairley, J. S.	60
Farner, Donald S.	41
Fatkulova, A. B.	67
Ferguson, Denzel E.	67
Ficken, Millicent S.	39
Ficken, Robert W.	39
Filonov, K. P.	46
Findley, James S.	14
Flyger, Vagn	35
Frank, Fritz	18
Friend, J. H.	14
Frisch, O.	50
Frye, John R.	53
Fuchimoto, Hajime	64
Funk, Howard D.	54
Gabrielson, Ira N.	9
Gabuzov, O.	50
Garanin, V. I.	37
Garland, Ian	58
Gasow, H.	52
Geerdes, Raymond J.	29
Gehlbach, Frederick R.	67
Geilikman, B. O.	11
George, John L.	5
Geptner, V.	7
Géroudet, P.	39,48
Gerzenstein, Eugenio	44
Gillham, Mary E.	64
Gizenko, A. I.	29,39
Gladkov, N. A.	44
Goldushko, B. Z.	25
Golikova, V. L.	18
Golley, F. B.	17
Gollop, J. B.	39
Gollop, Michael A.	39
Golovanova, E. N.	48
Goodliffe, Frank A.	62
Goodwin, Richard H.	4
Gorshkov, P. K.	22
Gorter, H. P.	9
Graham, Edward	9
Grakov, N. N.	26
Granett, Philip	48
Grant, David	68
Grieb, Jack R.	54
Griffin, Donald R.	14
Gross, A. O.	64
Guillard, R.	38
Gullion, Gordon W.	37
Hain, Michael L.	67
Hamajima, Fusanori	22
Hancock, David	35
Hansen, Charles G.	29
Hansen, M. F.	16
Hanzák, Jan	60
Hardy, John William	39,48
Harper, James A.	29
Harris, M. P.	58,59
Harthoorn, A. M.	11
Hartley, T. Carr	38
Hartowicz, Edgar	54
Hauser, Ronald J.	63
Hauueman, Larry E.	29
Hayward, J. S.	18
Heatwole, Harold	40
Hegdal, Paul L.	18
Helminen, Matti	12,15
Heppner, Frank	40
Herrick, E. H.	16
Hetrick, Wes	40
Hildén, Olavi	25,54
Hindle, Edward	54
Hitchcock, Harold B.	13,14
Hodson, N. L.	40,54
Hoeve, J. ten	9
Hoffmann, Luc	9,10
Höhn, E. O.	54
Holmes, Ann C. V.	36
Horsfall, Frank, Jr.	18
Hoslett, Sherman A.	12
Houston, T. B.	2
Howard, Walter E.	7
Huckle, H. F.	2
Hudson, Robert	52

Huheey, James E. 67
Huntington, C. E. 64
Hutchison, Victor H. 68
Il'enko, A. I. 40
Ilichev, V. D. 38
Inozemtsev, A. A. 40
Irby, Harold Dewey 52
Irwin, Louis Neal 67
Isaacson, A. J. 53
Ishii, Yoichi 22
Ishunin, G. I. 58
Ismagilov, M. I. 18
Ivanter, E. V. 50
Jansen, J., Jr. 48
Jeanne, Robert L. 26
Jewell, P. A. 35
Johnson, Ancel M. 18
Johnson, Clifford Ray 66,67
Johnson, Ned K. 44
Johnson, Richard E. 40
Jones, N. V. 64
Jönsgard, Åge 35
Jozefik, Mieczysław 46
Kadochnikov, N. P. 60
Kalevi, Raitasuo 55
Kapitonov, V. I. 22
Karpovich, V. N. 40,58
Kear, Janet 55
Kellogg, W. N. 35
Kem, W. 17
Kerfoot, O. 31
Kettlitz, W. L. 30
Kindel, Frederic J. 27,28
King, James R. 41
Kippers, M. 10
Kirkpatrick, G. D. 6
Kislenko, G. S. 64
Kizilov, V. A. 22
Klein, David R. 12
Klimpin', V. A. 56
Klimstra, W. D. 55
Klitin, A. N. 48
Koenders, J. W. 25
Koivisto, Ilkka 50
Kokhanov, V. D. 37
Kolesnikov, A. D. 50
Kolonin, G. V. 64
Korenberg, E. I. 51
Korochkina, L. N. 29
Koryakov, B. F. 24
Koskimies, Jukka 55
Kostin, V. P. 18
Kostin, Yu. V. 60
Krapivnyi, A. P. 24
Kratochvíl, Josef 18
Kruijt, J. P. 51
Krushinskii, L. V. 41
Kuchin, A. P. 60
Kuiper, F. J. 58
Kumerloeve, H. 64
Kurochkin, E. N. 45
Kuroda, Nagahisa 45,46
Kurskova, T. N. 50
Kuznetsov, B. A. 11
Kuznetsov, V. I. 51
Kuzyakin, A. P. 64
Kydyrbaev, S. 22
Lacher, Dorothy D. 51
Lacher, John R. 51
LaFave, Lynn D. 58
Lahrman, Fred W. 48
Lahti, Lauri 55
Lamba, B. S. 41
Lance, Art N. 52
Landreth, Hobart F. 67
Larina, N. I. 18
Lavrov, K. L. 19
Lay, Daniel W. 33
Lebeurier, Bd 53
Lebret, T. 55
Leentvaar, P. 10
Leeuwen, Chr. G. van 10
Lein', G. T. 56
Leinonen, Matti 55
Leitch, W. G. 55
Lemon, Robert E. 41
Lennerstedt, I. 41
Lent, Peter C. 30
Lévêque, R. 41
Licht, Paul 68
Liepa, V. K. 56
Livingstone, Robert, Jr. 3
Lloyd, James A. 62
Lobachev, V. 30
Lobachev, V. S. 64
Lobanov, N. V. 31
Locke, Louis N. 64
Lüdi, W. 4
Lynn, Robert T. 68
Lyon, E. T. 16
Mackay, Stuart 35
Mäki, Tauno V. 25
Malik, N. E. 62
Manville, Richard H. 13
Marburger, R. G. 34
Marckworth, Gordon D. 3
Markov, V. I. 37
Maryland 8
Mayfield, Harold 62
Mayhew, Wilbur W. 68
McCabe, Robert A. 41
McCaskie, Guy 40
McCulloch, J. S. G. 30
McDonald, Herman P. 2
McGrath, Raymond 51
McKeever, S. 19,23
McKelvey, Mike 61
McKinley, Daniel 64
McLean, A. 60
McMahon, K. J. 16
Mead-Briggs, A. R. 16
Mech, L. David 25
Medin, Dean E. 33
Mercer, Eugene 51

Page

Merkova, M. A. 19
Meyer, Roland K. 49,50
Mezhennyi, A. A. 37
Michael, Edwin D. 33
Michurin, L. N. 30
Middleton, A. D. 2
Mikhel'son, G. A. 55,56
Mikhelson, Kh. A. 56
Millar, John D. 42
Miller, Alden H. 45
Mohr, Carl O. 19
Molodovskii, A. V. 42
Molodovskii, A. V. 56
Monakhov, G. I. 26
Montagu, Ivor 12
Morozov, Yu. V. 43
Morrison, D. C. 30
Morton, Martin L. 41
Mörzer Bruijns, M. F. 4,10,58
Moshkov, E. A. 42
Mosolov, L. P. 19
Moulton, J. M. 64
Mukherjee, Ajit Kumar 49
Mulder, Th. 56
Munro, David A. 4
Murray, J. J., Sr. 45
Murton, R. K. 53
Mustafaev, G. T. 63
Myating, L. 6
Myrberget, S. 58
Mysterud, Ivar 6,61
Naether, Carl 53
Nagra, Clarence L. 49,50
Naik, P. V. 30
Naik, S. N. 30
Nakamura, Toru 45
Natal 8
Nature Conservancy 2,4
Naumov, R. L. 64
Nazarenko, L. F. 50
Nazarova, I. V. 65
Neal, Bobby J. 23
Neff, D. J. 30
Neill, Wilfred T. 68
Nemoto, Takahisa 35
Neranov, I. M. 23
Neronov, V. M. 19
Nickell, Walter P. 65
Nikitina, N. A. 19
Nikolaev, A. M. 26
Norderhaug, M. 65
Odum, Eugene P. 10
O'Gorman, Fergus 35
Ohsumi, Seiji 36
Okulova, N. M. 4
Okutani, Takashi 35
Olney, P. J. S. 56
Omura, Hideo 36
O'Neil, Ted 25
Onno, S. 37
O'Regan, W. G. 3
Orghidan, Traian 14

Page

Orr, Robert T. 38
Ostapenko, M. M. 45
Österholm, Henrick 26
Overton, W. Scott 5
Paasikunnas, Yrjö 50
Packchanian, Ardzroony 19
Padutov, E. E. 37
Palley, Marshall N. 3
Panov, E. N. 58
Pavlov, M. P. 7
Pavlov, Z. I. 45
Payne, Robert B. 42
Penney, R. L. 42
Pepper, Hubert J. 30
Peterson, Richard S. 35
Petrov, P. A. 19
Philippona, J. 56
Pinowski, Jan 42
Pirkola, Matti K. 50
Pithers, E. F. 61
Plumb, W. J. 58
Powell, James A. 52
Prévost, J. 38,42
Pricam, R. 61
Pronina, E. A. 19
Pruitt, William O. 12
Pulliainen, Erkki 27
Radchuk, V. 16
Rainey, Dennis G. 19
Rakhilin, V. K. 65
Ramp, Warren K. 42
Rankin, John S., Jr. 10
Ransom, A. Brian 33
Ranwell, D. S. 10
Rashkevich, N. A. 59
Ratcliffe, D. A. 5
Raun, Gerald G. 19
Raus, L. K. 12
Ray, Carleton 36
Ray, D. G. H. 13
Reeves, John Henry, Jr. 2
Reimers, N. F. 45
Requate, H. 4
Ribaut, Jean-Pierre 47
Rice, C. E. 35
Richardson, Frank 45,65
Riney, Thane 30
Robel, Robert J. 6,27,28,49
Robinson, R. M. 34
Rodionov, M. A. 51
Rogacheva, E. V. 5
Rogers, Alan E. F. 47
Romanov, V. S. 50
Romanov, Y. M. 59
Rongstad, Orrin J. 14
Root, Richard Bruce 42
Rooth, J. 10,11
Rowan, M. K. 47
Rozhkov, A. A. 19
Rudebeck, Gustaf 61
Rudneva, L. M. 42
Ruffer, David G. 20

Ruibal, Rodolfo 68
Rukovskii, N. N. 26
Ruwet, J. C. 4
Ryazankia, V. F. 56
Safonov, V. G. 24
Salganskii, A. 31
Samusenko, B. G. 12,24
Sanderson, Glen C. 36
Sanger, Gerald A. 65
Sapetin, Ya. V. 47
Sapin-Jaloustre, J. 42
Sarkar, A. K. 54
Sautter, Edward H. 3
Schevill, William E. 36
Schildmacher, H. 42
Schmid, William D. 68
Schnell, Jay Heist 20
Schroevers, P. J. 10
Seabloom, Robert W. 20
Segal, S. 10
Seierstad, Atle 6
Seierstad, Stâle 6
Selander, Robert K. 63
Semago, L. L. 44
Sergeeva, N. A. 51
Sevastianov, G. N. 61
Shaposhnikov, V. D. 24
Sheppe, Walter 20
Sherard, Hoyt 3
Shevareva, T. P. 47
Shiraishi, Satoshi 20
Shkatulova, A. P. 45
Shkilev, V. V. 21
Short, Henry L. 33
Shtil'mark, F. R. 21,23
Shubin, N. G. 23
Shubnikova, O. N. 43
Shuntov, V. P. 59
Simmons, K. E. L. 65
Simon, B. G. 6
Simpson, George Gaylord 12
Sittler, O. Dayle 33
Skalkin, V. A. 26
Skoczylas, Rafal 65
Skutch, Alexander F. 61,65
Slade, Norman A. 6
Sladen, W. J. L. 37
Sluiter, J. W. 15
Slulskii, A. A. 7
Smirin, Yu. M. 21
Smirnov, Vladimir 26
Smirnovskii, B. N. 68
Smit, A. 43
Smith, C. F. 52
Smith, E. A. 35
Smith, Murray S. R. 35
Snow, David W. 47,68
Snyder, Walter A. 32
Soil Conservation Service 3
Solomatin, A. O. 31
Solov'eva-Volynskaya, T. N. 58
Sorina, S. E. 25
Southwick, C. H. 21
Spaans, A. L. 63
Spichenko, D. A. 22
Stains, Howard J. 15
Stén, Ilkka 25
Strautman, E. I. 25
Strawiński, Stefan 45,46
Street, R. J. 36
Strokov, V. V. 46,65
Stumpf, William A. 19
Suga, Nobuo 15
Sulkava, Pertti 61
Sulkava, Seppo 61
Sumina, E. B. 51
Sumina, E. V. 51
Suthers, Roderick A. 15
Swales, M. K. 46
Swanberg, P. O. 10
Swennen, C. 63
Symonds, A. E. J. 63
Syroechkovskii, E. E. 5
Talbot, L. M. 30
Taro, Reijo 10
Teplov, V. P. 31
Thomas, Jack Ward 34
Tideman, P. 4
Tiemeier, Otto W. 16
Tietjen, Howard P. 18
Tigges, Johannes 37
Timofeev, V. V. 26
Tomkins, Ivan R. 59
Treus, V. D. 31
Treviño, H. A. 17
Tristan, D. P. 23
Trojan, Przemysław 21
Tropin, N. N. 21
Turner, Cynthia Gale 43
Turnipseed, Marvin R. 67
Turnock, W. J. 47
Twitty, Victor 68
Usachev, G. P. 23
Uspenskii, S. M. 56
Uys, C. J. 65
Van Den Broek, E. 48
van de Peppel, J. 43
van der Cingel, N. A. 59
van Heerdt, P. F. 15
van Orden, Chr. 43
Van Velzen, Willet T. 38
Varshavskii, S. N. 23,62
Vasenius, Helvi 27
Vaught, Richard W. 56
Verner, Jared 43
Vershinin, A. A. 12
Viksne, Ya. A. 57
Vinogradov, V. V. 59,62
Voo, E. E. van der 11
Vysokovskii, N. N. 14
Wallmo, O. C. 30
Walrecht, B. J. J. R. 43
Walton, K. C. 26
Ward, A. Lorin 18

	Page
Ward, Peter	65
Watson, R. M.	31
Webb, Robert G.	66
Webster, F. A.	14
Webster, W. A.	26
Weeden, J. Stenger	43
Weeks, H. H.	2
Weidmann, U.	59
Weller, Milton W.	57
West, George C.	44
Westerskov, Kaj	51
Westhoff, V.	4,9,10,11
Westwood, N. J.	53
Whitford, Walter G.	68
Wiens, John A.	44
Wijngaarden, A. van	11
Wildenthal, Joyce L.	44
Wilks, Bobby J.	19
Williams, I. C.	59
Williams, R. G.	17
Williams, Thomas R.	27,28
Wilson, Vivian J.	27
Wirtz, William O., II	17
Wittgen, A. B.	57,66
Wohlschlag, Donald E.	35
Wojciechowska, Bożena	21
Wood, Jack S.	57
Woodgerd, Wes	31
Wüst, Walter	57
Yakovlev, E. P.	23
Yocom, Charles F.	31,44
Youill, Thomas MacKay	17
Young, Stanley P.	13
Zaaijer, J. W.	11
Zablotskii, M. A.	32
Zalunardo, Raymond A.	34
Zelenka, G.	46,61
Zhantiev, R. D.	40
Zharkov, I. V.	24
Zhdanov, A. P.	24
Zimmerman, John L.	44
Zonderwijk, P.	11
Zwickel, Fred C.	52
Zykov, I. V.	24

Manuscript for this issue was completed 22 November 1965

U. S. GOVERNMENT PRINTING OFFICE : 1966 O - 798-787

Page

.. 17
57,66
.. 35
.. 21
.. 57
.. 31
.. 57
.. 23
31,44
.. 17
.. 13
.. 11
.. 32
.. 34
46,61
.. 40
.. 24
.. 24
.. 44
... 11
... 52
... 24

ne 1965
-787

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No.